

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

**IN RE: ICE LIBOR ANTITRUST
LITIGATION**

C.A. 1:19-cv-00439-GBD

Hon. George B. Daniels

**CONSOLIDATED AMENDED
CLASS ACTION COMPLAINT**

JURY TRIAL DEMANDED

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Years ago, we found out that the world’s biggest banks were manipulating LIBOR. . . . Now, the news is worse: LIBOR is made up.

Actually it’s worse even than that. LIBOR is probably both manipulated and made up. The basis for a substantial portion of the world’s borrowing is a bent fairy tale.

—Matt Taibbi
*Investigative Journalist*¹

Plaintiffs Putnam Bank, City of Livonia Employees’ Retirement System, City of Livonia Retiree Health and Disability Benefits Plan, Hawaii Sheet Metal Workers Health & Welfare Fund, Hawaii Sheet Metal Workers Training Fund, Hawaii Sheet Metal Workers Annuity Fund, and Hawaii Sheet Metal Workers Pension Fund (“Plaintiffs”), on behalf of themselves and all others similarly situated in the United States, bring claims under the Sherman Antitrust Act and Clayton Antitrust Act against Defendants named herein (in Part II.B., *infra*), for redress of the injury and damages resulting from Defendants’ price fixing conspiracy to depress 1-month and 3-month U.S. dollar-denominated ICE LIBOR (“USD ICE LIBOR”) rates and returns on USD ICE LIBOR Financial Instruments, as defined herein (in Part IV.G., *infra*), from at least as early as February 1, 2014, through the date by which the anticompetitive effects of Defendants’ violations of law shall have ceased, but in any case no earlier than the present (the “Class Period”). Based upon personal knowledge, information and belief, and investigation of counsel, Plaintiffs allege:

¹ Matt Taibbi, *Is LIBOR, Benchmark for Trillions of Dollars in Transactions, a Lie?* ROLLING STONE (Aug. 11, 2017), <https://www.rollingstone.com/politics/politics-news/taibbi-is-libor-benchmark-for-trillions-of-dollars-in-transactions-a-lie-253166/>.

I. NATURE OF THE ACTION

1. Meet the new LIBOR. Rigged like the old LIBOR.

2. The same panel of multinational banks that had been sitting on the old British Bankers Association U.S. dollar LIBOR panel, with a new and willing U.S.-based administrator as of February 1, 2014, devised a new way to systematically and continuously fix and depress U.S. dollar LIBOR on a daily basis. Together they have corrupted the re-branded “ICE” LIBOR joint rate-setting process, circumventing rules and protections ostensibly put in place to prevent collusion in order to facilitate their scheme, while thwarting post-scandal reform efforts, all the while maintaining the appearance of reform to both regulators and investors. Defendants have turned the joint process into unlawful collusion.

3. Fundamental to this new LIBOR scandal is a new lie. Although Defendants for years have represented that USD ICE LIBOR, by definition, reflects the rates at which panel banks “could” obtain interbank unsecured funding from each other or similar institutions, the interbank funding market is now virtually non-existent and has been throughout the Class Period.

4. U.S. regulators investigating USD ICE LIBOR in particular have now come to fully recognize this reality. And, despite the many recent statements by government regulators that ICE LIBOR is based on a virtually non-existent market, not one Defendant has raised a hand in protest. Rather, by their silence, Defendants have admitted the lack of an underlying market. Many have now even affirmatively admitted it.

5. The lack of an underlying market has left USD ICE LIBOR open to manipulation, and Defendants have taken full advantage by collusively depressing the benchmark rate to profit from it. The totality of government findings, publicly available documents and data, Defendants’ admissions, objective statistical analyses, as well as industry and market realities, confirm this.

6. This case comes after years of government investigations of the underlying market. Yet, despite governmental recognition of the reality that USD ICE LIBOR is based on a market that doesn't really exist, even as late as November 26, 2018, the Federal Reserve Bank of New York recognized that "LIBOR is *perceived* to represent the average interest rate at which banks can borrow from one another."²

7. Defendants have exploited this disconnect between perception and reality that they have perpetuated, and have been producing an entirely fabricated and depressed U.S. dollar benchmark rate, and using it in trillions of dollars of real U.S. transactions for profit throughout the Class Period.

8. This is the story of USD ICE LIBOR, its lack of an underlying market, its systematic and continuous daily depression by U.S. banks and other banks in the U.S., and Defendants' profiteering off U.S. investors, in the U.S., in U.S. dollars.

9. Since February 1, 2014, USD ICE LIBOR has been "the world's most widely used benchmark for short term bank borrowing rates,"³ and, since that date, ICE LIBOR has been collusively set at artificially low levels by Defendants, to the detriment of investors in financial instruments expressly indexed to the benchmark, such as Plaintiffs and members of the Class.⁴

² Federal Reserve Bank of New York, *5 Things You Should Know About LIBOR, ARRC, and SOFR* (Nov. 26, 2018).

³ ICE, *Benchmark Statement-ICE LIBOR*, at 1 (May 14, 2018), https://www.theice.com/publicdocs/LIBOR_Benchmark_statement.pdf.

⁴ Plaintiffs expressly disclaim claims for damages suffered prior to February 1, 2014, before USD LIBOR began being administered by ICE.

10. “No reference rate is more ubiquitous”⁵ than USD ICE LIBOR, which “is a cornerstone of the financial industry today,”⁶ and is “critical to the global financial system.”⁷ Hundreds of trillions of dollars in floating-rate financial instruments are expressly indexed to USD ICE LIBOR. These include floating-rate notes and interest rate swaps, among other types of financial instruments under which investors receive payments in an amount dependent upon the level at which USD ICE LIBOR is set. Defendants collectively control this dominant benchmark and the level at which it is set.

11. ICE LIBOR benchmark rates are set jointly and published each business day based on daily submissions by a group of multinational banks (the “Panel Bank Defendants”). The Panel Bank Defendants are: Bank of America, Citigroup, JPMorgan, Barclays, BNP Paribas, MUFG, Credit Agricole, Credit Suisse, Deutsche Bank, HSBC, Lloyds, Norinchukin, Rabobank, RBC, RBS, Societe Generale, Sumitomo, and UBS (as defined herein).

12. The Panel Bank Defendants not only participate in setting ICE LIBOR; they transact in financial instruments expressly indexed to ICE LIBOR in the United States. In particular, the Panel Bank Defendants transact in floating rate financial products in which ICE LIBOR rates form a component of the price, including when the interest payable by the Panel Bank Defendants to investors is dependent upon the rate they set.

13. A division of Intercontinental Exchange, Inc. (“ICE”), which owns and operates the New York Stock Exchange, is the nominal “administrator” of ICE LIBOR. The administrator, called ICE Benchmark Administration, is charged with collecting and validating the Panel Bank

⁵ Lorie K. Logan, Sr., Vice President, Federal Reserve Bank of New York, *The Role of the New York Fed as Administrator and Producer of Reference Rates* (Jan. 9, 2018), <https://nyfed.org/2Xwlr1n>.

⁶ Serge Gwynne, *What Does Replacing LIBOR Mean for Financial Firms?* OLIVER WYMAN, <https://www.oliverwyman.com/our-expertise/hubs/libor.html> (last visited June 26, 2019).

⁷ ICE, *ICE LIBOR Evolution* at 3 (Apr. 25, 2018), <https://bit.ly/2Nczgy0>.

Defendants' submissions, calculating and publishing the benchmark rates derived from those submissions, and implementing and enforcing the rules and procedures governing the rate-setting process to safeguard it from manipulation. All along, it has been the fox guarding the hen house.

14. The fundamental rule governing the ICE LIBOR rate-setting process is the ICE LIBOR "Submission Question," which defines the benchmark. By definition, ICE publishes daily rates based on the Panel Bank Defendants' responses to the Submission Question, which is put to the Panel Bank Defendants each business day:

At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11am?⁸

15. To ask or to answer this question is to assert that there is an active "interbank" funding market in which the Panel Bank Defendants "could" expect to "borrow funds." However, as financial regulators have explained, there is no such underlying market. Although ICE LIBOR supposedly "gauges the interest rate, credit premium and liquidity premium that a leading bank would expect to be offered by another similar institution,"⁹ it has now been revealed that the market for interbank unsecured borrowing, which is the market that Defendants have held out as underlying ICE LIBOR throughout the Class Period, has all but ended in recent years. In the words of the current Chairman of the Federal Reserve, Jerome Powell, and the Chairman of the Commodity Futures Trading Commission ("CFTC"), J. Christopher Giancarlo: "In essence, ***banks***

⁸ ICE, *ICE LIBOR Code of Conduct* (Issue 2), ¶3.1 (Feb. 3, 2014), <https://bit.ly/2J56QAN>.

⁹ *The Wheatley Review of LIBOR: final report*, at 75 (Sept. 2012), <https://bit.ly/1vn0aCW> [hereinafter *Wheatley Report*].

are contributing a daily judgment about something they no longer do.”¹⁰ The Chairman of the Federal Reserve and the Chairman of the CFTC further explain:

A lack of robustness, due to shrinking underlying markets, in certain key IBORs, coupled with the large volume of financial transactions that references these rates, has resulted in systemic risk concerns The minimal number of transactions in the unsecured interbank funding market means that submissions by panel banks are largely based upon judgment (as opposed to transactions).¹¹

16. While approximately \$200 trillion in financial instruments are expressly indexed to USD ICE LIBOR, the Federal Reserve, the central bank of the United States, recently disclosed that the number of transactions underlying USD ICE LIBOR submissions is minuscule and that on “*many days there are no transactions at all.*”¹² The reality is that the Panel Bank Defendants could not “borrow funds” in U.S. dollars in the interbank market in any “reasonable market size,” much less “just prior to 11am” each and every morning during the Class Period – and certainly not at the rates they said they “could”.

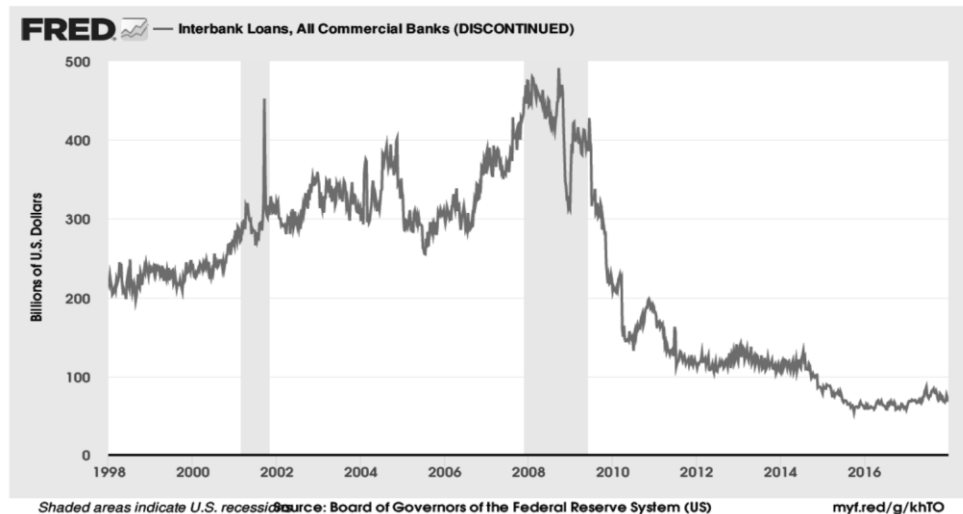
17. While there was once a robust underlying market, interbank funding was in decline by the 2008 financial crisis, and market and regulatory changes during 2008 exacerbated its demise. In recent years, the interbank funding market has dried up almost entirely.¹³

¹⁰ Jerome Powell and J. Christopher Giancarlo, *How to Fix Libor Pains*, THE WALL STREET JOURNAL (Aug. 3, 2017), <https://www.wsj.com/articles/how-to-fix-libor-pains-1501801028>. See also ISDA, *IBOR Global Benchmark Survey 2018 Transition Roadmap*, at 24 (Feb. 2018), <https://bit.ly/2FSuqzj>.

¹¹ *Id.*

¹² Randal K. Quarles, *Introductory Remarks, Alternative Reference Rates Committee Roundtable* (July 19, 2018), Federal Reserve Bank, <https://bit.ly/2Aagu3Z>.

¹³ Federal Reserve Bank of St. Louis (FRED), *Interbank Loans, All Commercial Banks (DISCONTINUED)*, <https://fred.stlouisfed.org/series/IBLACBW027NBOG#0>.



18. Nevertheless, even though the underlying interbank lending market virtually disintegrated, the Submission Question that serves to define USD ICE LIBOR has remained. On a daily basis during the Class Period, ICE has continued to ask the Submission Question and the Panel Bank Defendants have continued to answer it. As a result, USD ICE LIBOR has been based on the Panel Bank Defendants' responses asserting the existence of a market that Defendants have known no longer exists.

19. Moreover, the Panel Bank Defendants have been contributing USD ICE LIBOR submissions and using the published rate in real transactions that have been expressly indexed to the benchmark rate on a daily basis since February 2014.

20. The lack of an active underlying market in interbank funding by which to tether submissions to a market-based reality has left USD ICE LIBOR susceptible to manipulation. As the head of the Federal Reserve Bank of New York, William Dudley, explained in connection with USD ICE LIBOR:

The essential problem with LIBOR is the inherent fragility of its “inverted pyramid,” where the *pricing of hundreds of trillions of dollars of financial instruments rests on the expert judgment of relatively few individuals*, informed by a very small base of unsecured interbank transactions. . . .

This lack of market liquidity means that these rates cannot be sufficiently transaction-based to be truly representative, and ***rates that are not transaction-based are more at risk to be manipulated.***¹⁴

21. Without a functioning funding market from which to draw submissions, the Panel Bank Defendants have exploited their so-called “expert judgment” to manipulate USD ICE LIBOR submissions and rates through and under the cover of the official rate-setting process they collectively controlled with ICE.

22. Defendants thus corrupted the USD ICE LIBOR rate-setting process. Defendants combined and conspired to depress – and actually did depress – USD ICE LIBOR submissions and rates on daily basis during the Class Period.

23. Defendants’ USD ICE LIBOR submissions and rates were consistently lower than what they should have been during the Class Period. Even though “each submission” in response to the daily Submission Question was purportedly “a subjective determination of the rate at which a given Panel Bank could transact,”¹⁵ ICE LIBOR submissions and rates have been below the level at which the Panel Bank Defendants “could” have expected to obtain unsecured funding, even assuming they “could” borrow on a daily basis during the Class Period.

24. Multiple objective statistical analyses of publicly available data show that USD ICE LIBOR submissions and rates have not reflected bank funding costs and that Defendants always, or nearly always, submitted and set rates below where they would have but for their violations of law during the Class Period.

¹⁴ William C. Dudley, President and Chief Executive Officer, *The Transition to a Robust Reference Rate Regime*, FEDERAL RESERVE BANK OF NEW YORK (May 24, 2018), <https://nyfed.org/2Fw8BpY>.

¹⁵ ICE, *ICE LIBOR Evolution*, at 4 (Apr. 25, 2018), <https://bit.ly/2Nczgy0>.

25. Although ICE LIBOR was represented to be, and understood by investors to be, “the interest rate high-credit quality banks charge one another for short-term financing,”¹⁶ the Defendants’ submissions and published rates did not include the credit, term, and liquidity premiums called for by the ICE LIBOR definition and thus did not reflect, and were substantially lower than, the Panel Bank Defendants’ true expected costs of borrowing. Comparisons between USD ICE LIBOR rates and submissions during the Class Period to the following four objective metrics show that the Panel Bank Defendants’ USD ICE LIBOR submissions and rates during the Class Period did not accurately reflect the Panel Bank Defendants’ true expectation of the rates at which they actually “could” borrow funds from each other or similar banks on an unsecured basis, as called for by the Code of Conduct:

- Interest on Excess Reserves Paid by the Federal Reserve;
- Contemporaneous Trading in Panel Bank Defendants’ Unsecured Debt;
- General Collateral Rates; and
- Credit Default Swaps Spreads of the Panel Bank Defendants.

26. **ICE LIBOR was fixed below the floor set by the rate of interest on excess reserves.** Large U.S. and foreign banks, such as the Panel Bank Defendants, increasingly have been holding excess reserves as an alternative to interbank unsecured lending – and have been paid interest on excess reserves at a rate set by the Federal Reserve (“IOER”).

27. Prior to 2008, the Federal Reserve did not pay interest on excess reserves, and the interbank market was one of the primary outlets to which banks with excess reserves would turn by loaning funds to other banks on an unsecured, short-term basis. During the financial crisis in

¹⁶ PIMCO, *Interest Rate Swaps*, <https://global.pimco.com/en-gbl/resources/education/understanding-interest-rate-swaps> (last visited June 26, 2019).

2008, the Federal Reserve changed its longstanding rule and began paying interest on all reserves, including excess reserves.

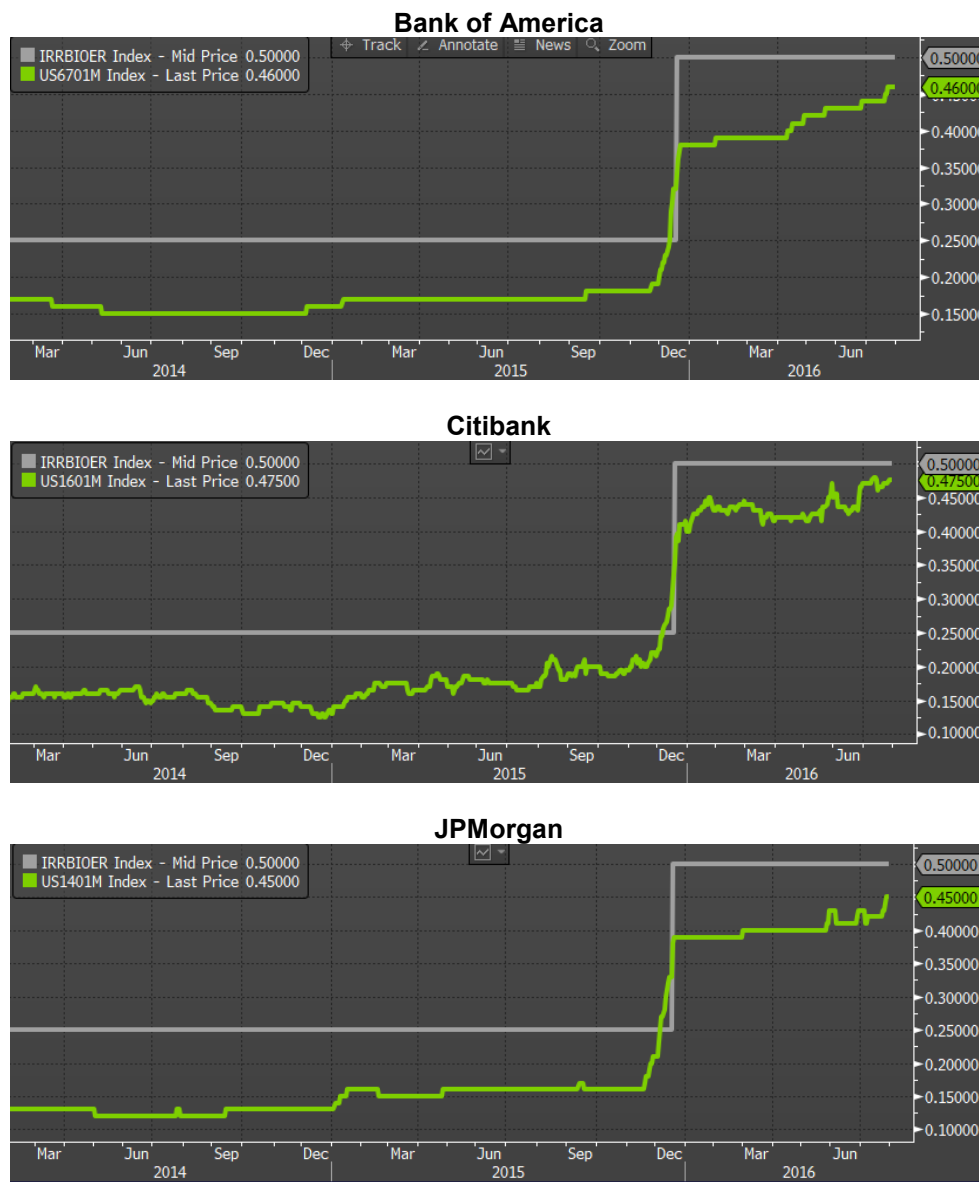
28. With the Federal Reserve now paying IOER, banks have ready access to risk-free, short-term interest on their excess reserves through the Federal Reserve. During the years since the Federal Reserve began paying interest on excess reserves and other post-crisis reforms were mandated, large banks, like the Panel Bank Defendants, have been holding cash in reserve rather than extending unsecured interbank loans.

29. IOER thus should be a floor for USD ICE LIBOR because a panel bank cannot truly expect to borrow from a fellow panel bank or other similar bank on an unsecured basis at a rate lower than the rate at which the same funds could be kept as excess reserves risk-free with the Federal Reserve.

30. The Panel Bank Defendants' individual submissions, however, were well below where they should have been in relation to IOER during the Class Period. For instance, nearly all 1-month LIBOR submissions were significantly below IOER nearly every day from February 1, 2014 (when ICE took over as administrator) through July 29, 2016 (the last date on which the Panel Bank Defendants' submissions are publicly available).¹⁷ The following charts illustrate this and compare the 1-month USD ICE LIBOR submissions of Bank of America, Citibank, and JPMorgan to IOER:

¹⁷ As of July 29, 2016, ICE and the Panel Bank Defendants stopped publishing individual bank submissions. See Part IV.E.1.a., *infra*.

1 MONTH USD ICE LIBOR SUBMISSIONS VS. IOER



31. Bank of America, Citibank, and JPMorgan, each submitted unsecured 1-month rates lower than risk-free overnight rates. This makes no sense under the ICE LIBOR definition. The other Panel Bank Defendants, just like Bank of America, JPMorgan, and Citibank, also submitted rates lower than IOER. (Similar results of comparisons of the publicly available submissions of the other Panel Bank Defendants to IOER are set forth in Part IV.E.1.a, *infra*).

32. The depressed submissions translated into depressed rates. To illustrate, the following chart compares USD ICE LIBOR to IOER from the same period and shows that rather than being above IOER, 1-month USD ICE LIBOR was actually nearly always below IOER:

1-MONTH USD ICE LIBOR vs. IOER



33. This analysis also shows that Panel Bank Defendants' submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

34. **Panel Bank Defendants' historic ICE LIBOR submissions were virtually always significantly lower than where their unsecured debt was trading contemporaneously.** Although the yield on banking organizations (i) should be equivalent to its corresponding USD ICE LIBOR submission for a given maturity at a given time, and (ii) surely would have been well-known by those on the USD funding desks responsible for submitting USD ICE LIBOR in real time, the Panel Bank Defendants' 1-month and 3-month submissions and rates were consistently significantly lower than the corresponding contemporaneously traded debt.

35. The results of the analysis were striking: for the 1-month tenor, the analysis showed Panel Bank Defendants' submissions were ***depressed 99.24% of the time by an average 41 basis points***. For the 3-month tenor, the analysis showed Panel Bank Defendants' submissions were ***depressed 93.47% of the time by an average 30 basis points***.

1-MONTH USD ICE LIBOR

Panel Bank Defendants' submissions were depressed 99.24% of the time by an average 41 basis points.

3-MONTH USD ICE LIBOR

Panel Bank Defendants' submissions were depressed 93.47% of the time by an average 30 basis points.

36. This analysis also shows that Panel Bank Defendants' submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

37. **USD ICE LIBOR (an unsecured rate) was depressed relative to general collateral (secured) rates.** A comparison of USD ICE LIBOR submissions and rates to General Collateral ("GC") rates also shows that Panel Bank Defendants' submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

38. GC rates are benchmarks that represent average yields on repurchase agreements ("repos") that use U.S. government securities as collateral. As secured rates, GC rates should be substantially lower than USD ICE LIBOR, which is based on unsecured borrowing.

39. At a minimum, the spread between GC and USD ICE LIBOR submissions should account for the capital requirements mandated by the Basel Accords, which assign a 20% risk weighting to interbank loans. However, the spreads between 1-month and 3-month USD ICE

LIBOR rates were actually less than the minimum implied by the risk-weighting assigned to interbank unsecured loans *more than 75% of the time* during the Class Period.

40. **USD ICE LIBOR was stabilized relative to CDS spreads.** A comparison of the Panel Bank Defendants' respective Credit Default Swaps ("CDS") spreads relative to their respective USD ICE LIBOR submissions also shows that Panel Bank Defendants' submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

41. Even though the Panel Bank Defendants' individual and collective perceived creditworthiness should have been a component of USD ICE LIBOR submissions and rates, the contemporaneous data shows that they were not.

42. **USD ICE LIBOR submissions violate Benford's Law.** Not only did the Panel Bank Defendants consistently make submissions lower than they should have during the Class Period resulting in lower overall rates, further analyses confirm that none of the Panel Bank Defendants submitted those low rates legitimately. Rather, forensic tests show that all Panel Bank Defendants' submissions violated Benford's Law of distribution in digits in sets of data.

43. "Benford's Law" states that in sets of legitimately occurring data, each digit (*i.e.*, 1 through 9) should occur in certain predictable frequencies. "Benford Tests" are used as tools by investigators, including the Internal Revenue Service, and even certain Panel Bank Defendants, to detect whether or not particular sets of numbers include accounting irregularities and fictitious entries, such as when someone is suspected of "cooking the books" or otherwise fabricating data. Defendant and co-conspirator Deutsche Bank, for instance, has admitted that Benford's Law

“holds for global financial data and is robust over time.”¹⁸ In short, legitimately created financial data sets generally follow Benford’s Law – illegitimate data sets generally do not.

44. Benford Tests were performed on all publicly available published USD ICE LIBOR daily submissions and rates using the first digit of the day-to-day percentage differences for the 18 Panel Bank Defendants for each of five tenors (overnight, 1-month, 3-month, 6-month, and 12-month) since ICE took over in February 2014.

45. Defendants flunked the tests.

46. The test results for every Panel Bank Defendant show to a *statistical certainty of greater than 99%* that their submissions did not conform to Benford’s Law during the Class Period. The inescapable conclusion, particularly since there was not an active underlying interbank market on which to base their submissions and rates, is that Defendants manufactured them.

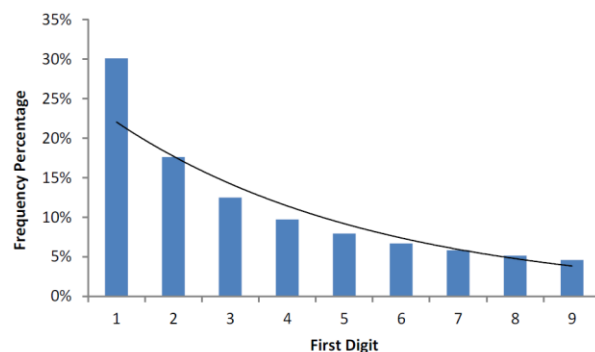
47. As depicted in the chart below taken from a Deutsche Bank investor communication promoting the applicability of Benford’s Law to financial data sets, digits in data sets conforming with Benford’s Law are distributed along a smooth and predictable pattern,¹⁹ called Benford’s curve:

¹⁸ Deutsche Bank Markets Research, *A Darwinian Approach to Detecting Accounting Irregularities* (Mar. 4, 2015), https://www.longfinance.net/media/documents/DB_SignalProcessing_2015.pdf.

¹⁹ *Id.*

BENFORD'S CURVE

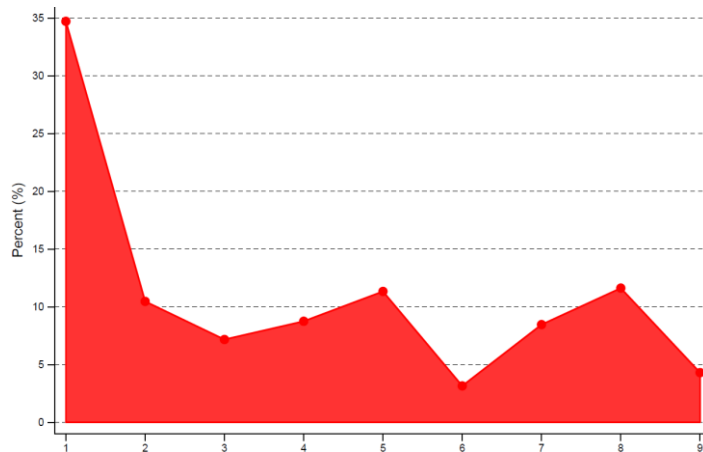
Figure 2: Theoretical distribution of the Benford's law



Source: Deutsche Bank Quantitative Strategy

48. The Panel Bank Defendants' USD ICE LIBOR submissions look nothing like this, however. The "curve" associated with UBS' aggregated data, on the first digit of its day-to-day percentage differences, for example, presents a particularly vivid illustration:

UBS' USD ICE LIBOR CURVE



49. All of the foregoing strongly indicates that the depressed USD ICE LIBOR submissions and rates during the Class Period were the product of collusion. It is no mere coincidence that all 18 Panel Bank Defendants submitted rates lower than they should have, as indicated by multiple objective measures, and violated Benford's Law. Defendants fundamentally corrupted the USD ICE LIBOR rate-setting process, including by asserting the existence of an

underlying funding market that “doesn’t exist” and by submitting, accepting, and disseminating depressed rates contrary to the USD ICE LIBOR definition. All of this parallel misconduct was undertaken in the context of preexisting concerted action and other factual circumstances, or “plus factors,” as used in antitrust analysis, which, when taken together, indicate that Defendants conspired to depress USD ICE LIBOR rates during the Class Period.

50. **Multi-faceted conspiracy designed to profit on United States transactions expressly linked to USD ICE LIBOR.** The conspiracy had the purpose and effect of depressing payments to members of the Class by Panel Bank Defendants on financial instruments expressly indexed to USD ICE LIBOR benchmark rates in the United States during the Class Period. Panel Bank Defendants worked together with ICE to accomplish their goal. Among other overt acts undertaken in furtherance of the conspiracy, some Defendants made depressed ICE LIBOR submissions to ICE that resulted in depressed USD ICE LIBOR rates. Some Defendants issued or otherwise directly transacted with members of the Class in financial instruments expressly indexed to USD ICE LIBOR in the United States. Some Defendants thwarted USD ICE LIBOR reform efforts. Some Defendants had multiple roles, as did ICE, which participated in all aspects of the corrupt USD ICE LIBOR process.

51. **Corruption of joint process.** Defendants have been engaged in a joint process in setting USD ICE LIBOR. The joint process is concerted action that has been supposedly governed by rules put in place to ostensibly ensure that the final published rate was representative of a competitive market. Defendants corrupted this joint process. While Defendants published a number of documents setting forth rules and procedures designed to portray the rate-setting process as transaction-based, and marked by independence and transparency, it was all window-dressing.

Defendants ignored and circumvented rules governing the rate-setting process – including, most notably, the very definition of ICE LIBOR – and, thus turned the joint process into collusion.

52. Defendants also were acutely aware of and consciously disregarded IOER, contemporaneous debt trading, GC rates, and CDS spreads, deciding to further circumvent the ICE LIBOR Code of Conduct, to which they pledged adherence and invited reliance in favor of manipulating, and systematically and continuously depressing USD ICE LIBOR on a daily basis. Each depressed USD ICE LIBOR submission, and each resulting depressed USD ICE LIBOR rate thus circumvented the rules and themselves corrupted the joint process, turning it into unlawful collusion.

53. Moreover, for years, in order to continue their conspiracy, Defendants collectively delayed reform and replacement of USD ICE LIBOR in furtherance of the conspiracy through their participation in the United States Alternative Rates Committee (“ARRC”). In 2014, the ARRC was convened by the Federal Reserve as part of U.S. regulatory efforts rate rigging stemming from the U.S. and global governmental investigations into prior BBA LIBOR scandal in order to reform and replace USD ICE LIBOR. The Fed appointed a number of Defendants to the industry organization. These Defendants – foreign and domestic – abused the ARRC process to slow-roll reform and maintain the status quo, missing critical deadlines set in 2014 by many years.

54. Since 2014, there have been at least 35 documented closed-door meetings held in New York, mostly at JPMorgan headquarters on 270 Park Avenue, at which Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS collectively discussed USD ICE LIBOR.

55. But it was not until in mid-2017 and into 2018, when (i) the revelations of the new USD ICE LIBOR scandal began to emerge; (ii) the Chair of the ARRC was replaced with an executive from a bank that did not sit on the USD ICE LIBOR panel; and (iii) the ARRC itself was reconstituted to include many new buy-side market participants, such as Blackrock and PIMCO; that meaningful progress to reform and replace USD ICE LIBOR, originally scheduled to happen by 2015, truly began to take place. The ARRC thus was at once a means by which Defendants furthered the conspiracy by delaying reform, while it also provided opportunity for this collection of horizontal competitors to conspire.

56. **Motive to conspire.** The structural characteristics of the ICE LIBOR-setting process and ICE LIBOR have made profitable collusion feasible. USD ICE LIBOR was the dominant benchmark, and Defendants dominated the benchmark rate. The submissions upon which the published rates were based were 100% within the collective discretion of the Panel Bank Defendants. As a result, the Panel Bank Defendants had the ability to consistently move the rate as they desired – if they worked together.

57. Plaintiffs allege a profit-motivated conspiracy. The conspiracy had the purpose and effect of depressing payments to members of the Class by Panel Bank Defendants on financial instruments expressly indexed to USD ICE LIBOR benchmark rates. By depressing payments to Plaintiffs and members of the Class, Panel Bank Defendants were able to decrease expenditures on those instruments substantially, resulting in Panel Bank Defendants saving billions of dollars on USD ICE LIBOR-linked floating rate instruments, at the expense of Plaintiffs and members of the Class.

58. Directionally, the Panel Bank Defendants – particularly the treasury departments and their funding desks charged with actually setting USD ICE LIBOR – had the incentive to

depress USD ICE LIBOR being net payers of USD ICE LIBOR. By way of example only, with hundreds of billions in floating rate issuances, the lower that USD ICE LIBOR was set, the less floating rate interest that Panel Bank Defendants were obligated to pay investors. Every basis point (*i.e.*, 0.0001) movement in USD ICE LIBOR downward would save the Panel Bank Defendants hundreds of millions in payments on such notes to investors over the Class Period. Savings on floating rate payments on interest rate swaps out of fixed rate notes were even greater than that.

59. The ICE LIBOR Code of Conduct placed responsibility for USD ICE LIBOR submissions with the Panel Bank Defendants' respective U.S. dollar funding desks, which reside within their respective treasury departments, which are vital divisions of banking organizations that directly impact all other divisions, and which report directly to the C-suite. Most, if not all, U.S. dollar funding desks of Panel Bank Defendants are located in the United States, often in New York City.

60. Motive to depress USD ICE LIBOR thus can be found in the Panel Bank Defendants' treasury departments' funding desks. The Panel Bank Defendants' funding desks consistently are net payers of USD ICE LIBOR while their other divisions are generally indifferent to the USD ICE LIBOR rate due to how banks, and bank holding companies operate. Consequently, the Panel Bank Defendants, through their treasury departments, consistently benefitted each day at the expense of investors from depressed USD ICE LIBOR submissions and rates.

61. ICE was a willing partner with the Panel Bank Defendants. If it came clean, there might have been no benchmark for it to administer. Benchmark administration is part of ICE's Data Services division, which ICE identifies as a significant component of its overall business. As

ICE acknowledged in its Annual Report filed with the United States Securities and Exchange Commission:

Any failures or negative publicity resulting from our administration of LIBOR or other benchmarks could result in a loss of confidence in the administration of these benchmarks and could harm our business and our reputation.

The elimination of LIBOR or any other changes or reforms to the determination or supervision of LIBOR could have an adverse impact on our business, financial condition and operating results.²⁰

62. ICE thus aided the Panel Bank Defendants by furthering the conspiracy to profit from USD ICE LIBOR in the U.S. Despite having the information within its control from the beginning, ICE never disclosed the lack of interbank funding, particularly the lack of interbank funding underlying USD ICE LIBOR, as had been called for. Like the Panel Bank Defendants, but unlike the general public, ICE knew at least as of the time it officially took over that there would not be enough interbank lending transactions to support USD ICE LIBOR.

63. **Interfirm Communications and Opportunity to Conspire.** In addition to the opportunity created by the ARRC, opportunity to conspire through interfirm communications was provided by ICE. As ICE CEO Jeff Sprecher told investors in 2014:

We bought the LIBOR index, and we took over the administration of creating LIBOR. *So, we're at the heart now of the day-to-day conversations with the industry, particularly the large banks, on the interest rate environment.*²¹

64. ICE hosted “a regular Panel Bank Forum,” for the Panel Bank Defendants to “discuss a range of topics” and “any agenda items requested by Benchmark Submitters.”²² These meetings were in addition to so-called “bilateral” meetings and communications between ICE and

²⁰ Intercontinental Exchange, Inc., Annual Report at 29 (Form 10-k) (Feb. 7, 2018).

²¹ Jeff Sprecher, Founder, Chairman, and CEO of ICE, Intercontinental Exchange Inc. at Goldman Sachs Financial Services Conference – Final Transcript, FD (Fair Disclosure) Wire (December 10, 2014).

²² ICE, *Policy Composition of ICE LIBOR Currency Panels* (Dec. 2018), https://www.theice.com/publicdocs/Policy_Composition_ICE_LIBOR_Panels.pdf.

each of the Panel Bank Defendants. The nature of the polling process meant that ICE and the Panel Bank Defendants communicated at least daily.

65. Moreover, the Panel Bank Defendants constituted the leadership of numerous financial industry groups, including organizations dealing specifically with USD ICE LIBOR and financial products expressly indexed to USD ICE LIBOR, in connection with which they would have engaged in countless other interfirm communications.

66. **Government investigations of USD ICE LIBOR.** Numerous government agencies – leaders and many other officials of which are quoted herein – have been investigating USD ICE LIBOR, recognized many of its problems, and have been or are involved in attempts to reform or replace it. Authorities investigating USD ICE LIBOR include, among others:

- United States Commodities and Futures Trade Commission;
- United States Bureau of Consumer Financial Protection;
- United States Securities and Exchange Commission;
- United States Department of the Treasury;
- United States Office of Comptroller of the Currency;
- United States Office of Financial Research;
- Board of Governors of the Federal Reserve System; and
- Federal Reserve Bank of New York.

67. **Actions against unilateral self-interest.** Due to the nature of the ICE LIBOR fixing process, a single depressed submission would have had only a negligible impact on the overall USD ICE LIBOR benchmark. The incentive for each of the Panel Bank Defendants to depress their individual submissions unilaterally, therefore, is weak, at best. In fact, since the final published rate was an average of 16 to 18 Panel Bank Defendants' submissions, with the top and bottom four excluded, it would often times be futile for one bank to make artificial submissions in

hopes of unilaterally manipulating USD ICE LIBOR. On the other hand, a coordinated effort by all Panel Bank Defendants to make depressed submissions has a certain, and substantial, effect on USD ICE LIBOR, and hence on the Panel Bank Defendants' profits. Moreover, unilateral attempts at manipulation meant the possibility of detection, while there was safety in numbers by staying together and using the public rate-setting process to facilitate collusive manipulation.

68. **No natural reaction to common stimuli.** Since Defendants' submissions failed Benford's Law, it is not credible that all Panel Bank Defendants each submitted low rates in parallel for some legitimate reason. The reason that antitrust law calls for more than mere parallel conduct to infer conspiracy is because sometimes parallel behavior is a *legitimate* reaction to common stimuli. Here, not only were each of the Panel Bank Defendants' daily submissions across multiple tenors over multiple years depressed in parallel, they were – *with 99% certainty* – baseless. If the depressed submissions and rates were arrived at legitimately, they would not have violated Benford's Law.

69. Taken together with their corruption of the joint rate-setting process and the plus factors articulated above – motive, opportunity, government investigations, and actions against unilateral self-interest – the violation of Benford's Law shows that the Panel Bank Defendants' parallel misconduct did not result from chance, coincidence, independent responses to common stimuli, or mere interdependence unaided by an advanced understanding among the parties; rather, it shows submissions resulting from collusion.

70. **Recidivism.** Another indicator of collusion is the Panel Bank Defendants' long and infamous history of antitrust violations, including not only rigging USD LIBOR prior to ICE taking over as administrator in February 2014, but also other "IBOR" rates in the past, as well as other significant financial benchmarks with which they have been entrusted, including the daily

WM-Reuters FX foreign currency exchange benchmark fixing, ISDAfix swap rate fixing, and the Silver and Gold daily fixings. The Panel Bank Defendants have paid billions collectively in criminal fines and civil penalties to U.S. and global enforcers, as well as to resolve civil cases brought by investors stemming from government investigations of these and other schemes to manipulate systemically important financial benchmarks, products, and markets, during the past decade. Some have even pled guilty to federal felonies.²³

71. Financial regulators have emphasized in the aftermath of the financial crisis that “[a] benchmark can only be as robust as its underlying market.”²⁴ It was “critical,” as the CFTC has put it, for USD ICE LIBOR submissions and rates, therefore, to “reflect an honest assessment of the costs of borrowing unsecured funds in the interbank markets.”²⁵ However, USD ICE LIBOR submissions and rates did not reflect any such honest assessment, resulting in damages to investors in financial instruments expressly indexed to USD ICE LIBOR during the Class Period.

72. In the wake of recent disclosures, regulatory and industry efforts to replace ICE LIBOR with alternative benchmarks are now well underway. As stated by CFTC Chairman Giancarlo:

Simply put, money center banks no longer rely on unsecured inter-bank lending to finance their daily operations. As a result, LIBOR is a widely utilized benchmark that is no longer derived from a widely traded market. It is an enormous edifice built on an eroding foundation – an unsustainable structure.²⁶

²³ Department of Justice (DOJ), *Five Major Banks Agree to Parent-Level Guilty Pleas*, DOJ Press Release (May 20, 2015), <https://www.justice.gov/opa/pr/five-major-banks-agree-parent-level-guilty-pleas> (DOJ guilty pleas for Barclays, Citicorp, JPMorgan Chase, and RBS).

²⁴ Financial Stability Board, *Reforming Major Interest Rate Benchmarks*, at 13 (July 22, 2014), http://www.fsb.org/wp-content/uploads/r_140722.pdf?page_moved=1.

²⁵ CFTC, *Opening Statement of Commissioner, Brian Quintenz, before the CFTC Market Risk Advisory Committee Meeting* (July 12, 2018), <https://bit.ly/2X1tBuD>.

²⁶ CFTC, *Opening Statement of Chairman J. Christopher Giancarlo before the Market Risk Advisory Committee Meeting, Washington, D.C.* (July 12, 2018), <https://bit.ly/2LP2EpF>.

73. According to Chairman Giancarlo the demise of LIBOR is inevitable: “LIBOR’s discontinuation of LIBOR is NOT something that MAY happen, but is something that WILL happen.”²⁷

74. Whether USD ICE LIBOR is eventually successfully replaced, however, provides no remedy to investors in financial instruments expressly indexed to USD ICE LIBOR for injuries already suffered as a result of USD ICE LIBOR being set at artificially low levels by Defendants during the Class Period.

75. Plaintiffs bring this action for redress of the substantial injuries they and other similarly situated investors have suffered and continue to suffer as a result of Defendants’ violations of law.

II. PARTIES

A. Plaintiffs

1. Putnam Bank

76. Plaintiff Putnam Bank (“Putnam”) is a Connecticut-charted capital stock savings bank, with its principal place of business at 40 Main Street, Putnam, Connecticut 06260.

77. During the Class Period, Putnam transacted directly with one or more Panel Bank Defendants in USD ICE LIBOR Financial Instruments, as defined herein, including at least Bank of America and JPMorgan. In particular, Putnam directly received from such Panel Bank Defendants payments based on interest at rates expressly indexed to USD ICE LIBOR benchmark rates set by Defendants during the Class Period.

²⁷ *Id.* (emphasis in original).

78. Putnam was injured in its business or property as a direct, proximate, and material result of Defendants' violations of law.

79. Putnam is threatened with future injury to its business and property by reason of Defendants' continuing violations of law.

2. City of Livonia Plaintiffs

80. Plaintiffs City of Livonia Employees' Retirement System and City of Livonia Retiree Health and Disability Benefits Plan ("Livonia Plaintiffs") have their principal place of business at 33000 Civic Center Drive, Livonia, Michigan 48154.

81. During the Class Period, Livonia Plaintiffs transacted directly with one or more Panel Bank Defendants in USD ICE LIBOR Financial Instruments, as defined herein, including at least Bank of America, Citibank, JPMorgan, Barclays, and HSBC. In particular, Livonia Plaintiffs directly received from such Panel Bank Defendants payments based on interest at rates expressly indexed to USD ICE LIBOR benchmark rates set by Defendants during the Class Period.

82. Livonia Plaintiffs were injured in their business or property as a direct, proximate, and material result of Defendants' violations of law.

83. Livonia Plaintiffs are threatened with future injury to their business and property by reason of Defendants' continuing violations of law

3. Hawaii Sheet Metal Workers Plaintiffs

84. Plaintiffs Hawaii Sheet Metal Workers Health & Welfare Fund, Hawaii Sheet Metal Workers Training Fund, Hawaii Sheet Metal Workers Annuity Fund, and Hawaii Sheet Metal Workers Pension Fund ("Hawaii Sheet Metal Workers Plaintiffs") have their principal place of business at 1405 N. King Street, Suite 403, Honolulu, Hawaii 96817.

85. During the Class Period, the Hawaii Sheet Metal Workers Plaintiffs transacted directly with one or more Panel Bank Defendants in USD ICE LIBOR Financial Instruments, as

defined herein, including at least Bank of America, Citibank, JPMorgan, HSBC, RBC, and UBS. In particular, the Hawaii Sheet Metal Workers Plaintiffs directly received from such Panel Bank Defendants payments based on interest at rates expressly indexed to USD ICE LIBOR benchmark rates set by Defendants during the Class Period.

86. Hawaii Sheet Metal Workers Plaintiffs were injured in their business or property as a direct, proximate, and material result of Defendants' violations of law.

87. Hawaii Sheet Metal Workers Plaintiffs are threatened with future injury to their business and property by reason of Defendants' continuing violations of law.

B. Defendants

1. ICE Defendants

88. Defendant Intercontinental Exchange, Inc. is a Delaware corporation with its principal place of business at 5660 New Northside Drive, Atlanta, Georgia 30328. Its common stock trades on the New York Stock Exchange under the ticker symbol "ICE." It also owns the New York Stock Exchange.

89. Defendant Intercontinental Exchange Holdings, Inc. is a Delaware corporation registered to do business in New York with its principal place of business at 5660 New Northside Drive, Atlanta, Georgia 30328.

90. Defendant ICE Benchmark Administration Limited (f/k/a NYSE Euronext Rate Administration Limited) ("IBA") is a U.K. company with a registered address of Milton Gate, 60 Chiswell Street, London, EC1Y 4SA, United Kingdom. NYSE Euronext Rate Administration Limited was renamed ICE Benchmark Administration Limited after Intercontinental Exchange,

Inc.'s acquisition of NYSE Euronext in 2013.²⁸ After the acquisition, four of NYSE Euronext's directors joined ICE's 14 member board,²⁹ and the resulting company is dual-headquartered in Atlanta and New York.³⁰ The IBA data infrastructure is located in the United States, including in New York.

91. Defendant ICE Data Services, Inc. ("ICE Data Services") is a Delaware corporation registered to do business in New York with a principal place of business located at 100 Church Street, 11th Floor, New York, New York 10007. ICE Data Services owns and operates the ICE Report Center, which houses USD ICE LIBOR data and with which registration is required to access certain USD ICE LIBOR rate and submission data from ICE.

92. Defendant ICE Pricing and Reference Data LLC ("ICE Pricing and Reference Data") is a Delaware company registered to do business in New York with a principal place of business located at 100 Church Street, 11th Floor, New York, New York 10007.

93. Unless stated otherwise, Defendants Intercontinental Exchange, Inc., Intercontinental Exchange Holdings, Inc., IBA, ICE Data Services, ICE Pricing and Reference Data, and their subsidiaries, predecessors, and affiliates, are referenced collectively in this Complaint as "ICE" or the "ICE Defendants."

94. ICE was a co-conspirator with the Panel Bank Defendants and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. ICE has served as the administrator of ICE LIBOR since February 1, 2014. ICE publishes ICE LIBOR

²⁸ Gov.UK, *First day of business for new LIBOR administrator* (Feb. 3, 2014), <https://www.gov.uk/government/news/first-day-of-business-for-new-libor-administrator>.

²⁹ Yahoo! Finance, *ICE closes on \$11B acquisition of NYSE Euronext* (Nov. 13, 2013), <https://finance.yahoo.com/news/ice-closes-11b-acquisition-nyse-135835485.html>.

³⁰ ICE, *Intercontinental Exchange Completes Acquisition of NYSE Euronext* (Nov. 13, 2013), <https://ir.theice.com/press/press-releases/all-categories/2013/11-13-2013b>.

rates and related information in the United States, including in this District, via interstate wires to the investing public directly, as well as through third-party news services, such as Bloomberg and Reuters. ICE maintains the registered federal trademarks on ICE LIBOR® for use of the marks in U.S. commerce through Intercontinental Exchange Holdings, Inc.

95. During the Class Period, the ICE Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States. The ICE Defendants are so intertwined that ICE Benchmark Administration Limited, which is supposed to be independent, is headquartered at the same London address as Intercontinental Exchange, Inc.'s London office. Moreover, although IBA in London is the nominal administrator, *ICE LIBOR was calculated in Atlanta during the Class Period*. Indeed, *IBA's data infrastructure resides in the ICE U.S. data centers in Atlanta, California, Chicago, and New York*. Hence, the USD ICE LIBOR-related data of ICE and IBA is maintained in the United States.

96. On its website, IBA lists as one of its "Contact Us" support telephone numbers: (347) 252-6465, which is a number with a *New York City area code*.³¹

97. IBA has also repeatedly made presentations on the topic of ICE LIBOR to various industry conferences within the United States over the past several years. For instance, in 2018, IBA presented at both the SFIG Vegas 2018 in Nevada and the 43rd Annual International Futures Industry Conference in Boca Raton, Florida. In 2017, IBA presented at the 33rd Annual FIA Futures and Options Expo in Chicago, Illinois.³²

³¹ ICE, *Contact Us*, <https://www.theice.com/iba/contact>.

³² Bloomberg, *Company Overview of ICE Benchmark Administration Limited*, <https://bloom.bg/2XxZuiD> (last visited June 26, 2019).

98. In addition, many other facts suggest that IBA is an alter ego and mere department of Intercontinental Exchange, Inc.

99. First, IBA's financial filings in the United Kingdom indicate that they "have been included in the group financial statements of the ultimate parent company, Intercontinental Exchange, Inc." in the United States, to which all of their profits flow.

100. Second, IBA and Intercontinental Exchange, Inc. share officers and directors. For instance, David S. Goone is the Chief Strategy Officer of Intercontinental Exchange, Inc. while also serving as a Director of IBA since August 2014.³³ Similarly, Timothy Bowler is the President of IBA but is also listed under Intercontinental Exchange, Inc.'s Executive Management Team on the company website and in its annual reports.³⁴ Mr. Bowler was chosen as President of IBA by Intercontinental Exchange, Inc.³⁵

101. Third, the commingling of personnel permeates other ICE entities. For example, Intercontinental Exchange, Inc.'s General Counsel, Andrew Surdykowski, simultaneously serves on the board of directors of NYSE Holdings UK Limited, the direct parent that wholly owns IBA.³⁶ Before that, Mr. Surdykowski's predecessor as general counsel, Johnathan Short, similarly simultaneously served on the same board of directors until his retirement.³⁷

³³ Compare Gov.UK, *Companies House*, <https://bit.ly/2xcnxVx> (last visited June 26, 2019), with ICE, *Management*, <https://bit.ly/2ZJmoky> (last visited June 26, 2019).

³⁴ See ICE, Intercontinental Exchange, Inc. 2018 Annual Report, at 149, <https://ir.theice.com/~media/Files/ICE-IR/annual-reports/2018/2018-annual-report.pdf>.

³⁵ Samuel Agini, *ICE Names Futures and Libor Bosses in London*, FINANCIAL NEWS (Sept. 6, 2017), <https://www.fnlonon.com/articles/ice-names-new-futures-and-libor-bosses-in-london-20170906>.

³⁶ Compare ICE, *Management*, <https://ir.theice.com/governance/management> with Gov.UK, *NYSE UK Holdings Limited*, Companies House, <https://beta.companieshouse.gov.uk/company/06387224/officers> (last visited June 26, 2019).

³⁷ ICE Management, *supra*.

102. Fourth, Intercontinental Exchange, Inc. is IBA's mouthpiece, and press releases about IBA are often announced by, and appended with information about, Intercontinental Exchange, Inc. For example, in an April 1, 2019, press release, *Intercontinental Exchange, Inc.* announced that IBA had "successfully completed the transition of all LIBOR panel banks to the Waterfall Methodology."³⁸ The two media contacts listed at the end of this press release are not IBA employees; instead, the contacts listed are: (1) Damon Leavell, Head of Communications for ICE Americas and Global Head of Communications for ICE Data Services and based in New York;³⁹ and (2) Warren Gardiner, Vice President of Intercontinental Exchange, Inc. based in Atlanta.⁴⁰

103. Fifth, IBA uses documents and forms standardized or prescribed by its parent Intercontinental Exchange, Inc. On IBA's website, the Terms and Conditions at the bottom state that the website "is owned and operated by Intercontinental Exchange, Inc." and "applies to any and all websites operated by Intercontinental Exchange Inc. and/or its subsidiaries, including ... ICE Benchmark Administration Limited."⁴¹ IBA's website is housed entirely inside of Intercontinental Exchange Inc.'s website.

104. Sixth, IBA shares a common blue square logo with Intercontinental Exchange, Inc. with the only difference being that IBA's logo includes the words "Benchmark Administration." According to the online Terms of Use, the trademark for IBA's logo is owned by Intercontinental Exchange Holdings, Inc., a wholly-owned subsidiary of Intercontinental Exchange, Inc.⁴²

³⁸ ICE, *ICE Benchmark Administration Successfully Completes the Transition of LIBOR Panel Banks to the Waterfall Methodology* (Apr. 01, 2019), <https://bit.ly/2ZGaacc>.

³⁹ LinkedIn, <https://www.linkedin.com/in/damon-leavell-0bbb961/>.

⁴⁰ LinkedIn, <https://www.linkedin.com/in/warren-gardiner-cfa-29095b2/>.

⁴¹ ICE, *Terms of Use*, <https://www.intercontinentalexchange.com/terms-of-use>.

⁴² *Id.*

105. Further, IBA both individually and in conjunction with the other ICE Defendants, was a co-conspirator and committed numerous overt acts in furtherance of the conspiracy alleged herein in the United States and this District. IBA and the ICE Defendants engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. IBA and other ICE Defendants offered, advertised, solicited, sold and profited from licenses for the use of the USD ICE LIBOR benchmark in the United States, including licenses allowing the use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by Panel Bank Defendants with members of the Class in the United States.

2. Panel Bank Defendants

a. Bank of America Defendants

106. Defendant Bank of America Corporation (“BAC”) is a Delaware corporation with its principal place of business at 100 North Tryon Street, Charlotte, North Carolina 28202.

107. Defendant Bank of America N.A. (“BofA”) is a federally chartered national banking association with its principal place of business also at 100 North Tryon Street, Charlotte, North Carolina 28202.

108. Defendant Merrill Lynch, Pierce, Fenner & Smith Inc. (“BAML”) is a Delaware corporation with its principal place of business at One Bryant Park, New York, New York 10036.

109. Unless stated otherwise, BAC, BofA, and BAML, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Bank of America” or the “Bank of America Defendants.”

110. During the Class Period, the Bank of America Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that

purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

111. Each named Bank of America Defendant was a co-conspirator and committed numerous overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Bank of America Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one Bank of America Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one Bank of America Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

112. By way of example only, in 2019, BAC reported that it had issued \$12.6 billion of senior fixed-to-floating rate notes within the United States expressly indexed to 3-month USD ICE LIBOR.⁴³ On June 12, 2014, BAC issued 1,500,000 Depository Shares set to pay a dividend expressly indexed to 3-month USD ICE LIBOR plus a spread of 3.387% per annum for each quarterly dividend period beginning June 17, 2019.⁴⁴

113. During the Class Period, BAC employed traders in the United States who traded in USD ICE LIBOR Financial Instruments with U.S. customers and for their own proprietary

⁴³ *Recent Notable Debt and Preferred Stock Issuances*, Bank of America, *available at* <https://bit.ly/2FGHPv7>. (Plaintiffs present this information, and other similar information below pursuant only to representations Defendants make in their annual reports, financial statements, and other similar reports).

⁴⁴ Prospectus Supplement to Prospectus dated March 30, 2012, Bank of America, *available at* <https://bit.ly/2FGHPv7>.

account, including Shyam Rajan, a managing director of rates trading in Bank of America's New York City office, and Ruke Ufomata, a U.S. rates trader in Bank of America's New York City office.

114. BAC's Global Banking and Global Markets businesses hire investment bankers that deal in USD ICE LIBOR Financial Instruments, such as Scott Farmer, a CFA and an investment banker at Bank of America Merrill Lynch in New York City. Since January 2019, Farmer has been the Vice-President of Consumer and Retail Investment Banking. He previously worked as an associate in this department between July 2015 until December 2018.

115. BofA represented the Bank of America Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

b. Citibank Defendants

116. Defendant Citigroup Inc. ("Citi") is a Delaware corporation with its principal place of business at 399 Park Avenue, New York, New York 10022.

117. Defendant Citibank, N.A. ("Citibank") is a federally chartered national banking association headquartered at 399 Park Avenue, New York, New York 10022.

118. Defendant Citigroup Global Markets Inc. ("CGMI") is a Delaware corporation headquartered at 390-388 Greenwich Street, New York, New York 10013.

119. Unless stated otherwise, Defendants Citi, Citibank, and CGMI, and their subsidiaries and affiliates, are referenced collectively in this Complaint as "Citibank" or the "Citibank Defendants."

120. During the Class Period, the Citibank Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

121. Each named Citibank Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Citibank Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. While at least one Citibank Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, at least one other Citibank Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

122. In the United States, as part of its treasury operations, Citi engages in transactions involving USD ICE LIBOR Financial Instruments including interest rate swaps, trust preferred securities, floating rate notes, debentures, preferred stock, certificates of deposit, and corporate bonds.

123. By way of example only, Citi issued \$12.1 billion in floating rate notes expressly linked to USD ICE LIBOR.⁴⁵ For example, on June 9, 2016, Citi issued within the United States \$1 billion in floating rate notes with quarterly interest payments expressly indexed to 3-month USD ICE LIBOR plus a spread of 0.930. The notes were underwritten by CGMI among others.⁴⁶ Citi issued \$18.4 billion in preferred stock, including stock with floating rates expressly indexed to USD ICE LIBOR.⁴⁷ For example, on August 12, 2015, Citi issued \$1.2 billion in fixed-to-

⁴⁵ Citigroup, Inc., *available at* <http://citi.us/2ZX7nLT>.

⁴⁶ Prospectus Supplement to Prospectus dated Nov. 13, 2013, FRN due June 07, 2019, Citigroup, Inc., *available at* <http://citi.us/2ZX7nLT>.

⁴⁷ *See* Citigroup Inc., 2018 Annual Report, at 204-05, 210.

floating rate noncumulative preferred stock with a floating rate expressly indexed to 3-month USD ICE LIBOR plus 4.095% payable quarterly.⁴⁸

124. During the Class Period, Citibank employed traders in the United States who traded in USD ICE LIBOR Financial Instruments with U.S. customers and for their own proprietary account, including Justin Firmino, an interest rate derivatives trader in Citibank's New York City office who specializes in USD interest rate swaps, and Won Kook Kim, a US interest rates trader in Citibank's New York City office. Citibank's sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to U.S. investors, including Drew Magiera, a vice president of sales in Citibank's New York City office.

125. Citibank Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

126. Citibank represented the Citibank Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

c. JPMorgan Defendants

127. Defendant JPMorgan Chase & Co. ("JPM") is a Delaware corporation with its principal place of business at 270 Park Avenue, New York, New York 10017.

128. Defendant JPMorgan Chase Bank, N.A. ("JPMB") is a federally-chartered national banking association headquartered at 270 Park Avenue, New York, New York 10017.

129. Defendant J.P. Morgan Securities LLC ("JPMS") is a Delaware limited liability company with its principal place of business at 277 Park Avenue, New York, New York 11072.

⁴⁸ Citigroup, *Prospectus Supplement* (Nov. 13, 2013), SEC, available at <https://www.sec.gov/Archives/edgar/data/831001/000119312513440005/d621350d424b2.htm>.

Unless stated otherwise, Defendants JPM, JPMB, and JPMS, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “JPMorgan” or the “JPMorgan Defendants.”

130. During the Class Period, the JPMorgan Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

131. Each named JPMorgan Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named JPMorgan Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. While at least one JPMorgan Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, at least one other JPMorgan Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

132. During the Class Period, JPM employed traders in the United States who traded in USD ICE LIBOR Financial Instruments, including Ammar Safwat Ahmed, a vice president and interest rate derivatives trader in JPM’s New York City office.

133. By way of example only, in 2019 JPM issued \$4.25 billion in long-term senior subordinated notes expressly indexed to 3-month USD ICE LIBOR.⁴⁹ In 2018, JPM issued \$22 billion in long-term senior and subordinated notes expressly indexed to 3-month USD ICE

⁴⁹ JP Morgan Chase, <https://bit.ly/2IXzEfC>.

LIBOR.⁵⁰ These products were marketed and sold to investors in the United States. JPM also issued preferred stock expressly indexed to USD ICE LIBOR. For example, in 2017 JPM issued \$1.258 billion in non-cumulative preferred stock which paid a fixed rate until a specified date and then a floating rate expressly indexed to 3-month USD ICE LIBOR plus 2.58%.⁵¹

134. JPMB offers a range of investment products to U.S. customers, including OTC derivatives and interest rate swaps expressly indexed to USD ICE LIBOR.

135. JPMS, as a registered U.S. broker-dealer and CFTC swap dealer, regularly engages in transactions USD ICE LIBOR Financial Instruments in the United States.

136. JPMorgan Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

137. JPMB represented JPMorgan Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

d. Barclays Defendants

138. Defendant Barclays plc is a U.K. public limited company with its principal place of business at 1 Churchill Place, London E14 5H, United Kingdom.

139. Defendant Barclays Bank plc ("Barclays Bank") is a U.K. public limited company with its principal place of business at 1 Churchill Place, London E14 5H, United Kingdom, and operates a New York branch at 745 Seventh Avenue, New York, New York 10019.

140. Defendant Barclays Capital Inc. ("Barclays Capital") is a Connecticut corporation with its principal place of business at 745 Seventh Avenue, New York, New York 10019.

⁵⁰ *Id.*

⁵¹ *Id.*

141. Barclays Bank is licensed, supervised, and regulated to do business in this state by the NYSDFS. Barclays Bank is also regulated by the Board of Governors of the Federal Reserve System. Barclays Bank is a provisionally registered dealer with the CFTC. Barclays Bank listed its New York branch, as well as Barclays Capital, as “Material Entities” in its FDIC Resolution Plan.⁵²

142. Unless stated otherwise, Barclays plc, Barclays Bank and Barclays Capital, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Barclays” or the “Barclays Defendants.”

143. During the Class Period, the Barclays Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

144. Each named Barclays Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Barclays Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one Barclays Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

⁵² *Barclays PLC, 2018 U.S. Resolution Plan, Public Section*, Barclays (July 2018), <https://www.fdic.gov/regulations/reform/resplans/plans/barclays-165-1807.pdf>.

145. According to its Resolution Plan, Barclays plc's consumer and wholesale bank services are anchored in its *“two home markets of the UK and US.”* As reported, the United States is Barclays plc's *“second home market and is fundamental to Barclays' transatlantic strategy, accounting for a significant portion of Barclays plc's employees, revenue and profit.”*⁵³

146. During the Class Period, Barclays plc, through its subsidiaries, employed traders in the United States who traded in USD ICE LIBOR Financial Instruments with U.S. customers and for their own proprietary account, including Hanbing Jiang, a vice president of rates algorithmic trading based in Barclays Capital Inc.'s New York City office, and John O'Callaghan, a director of global head rates and electronic trading who specializes in interest rate derivatives, also based in Barclays Capital Inc.'s New York City office.

147. During the Class Period, Barclays plc employed sales teams in the United States who sold USD ICE LIBOR Financial Instruments to U.S. investors, including Gemma Palmer, a vice president of rate sales within Barclays' US Risk Solutions Group based in New York City, who works to “[a]dvise corporate clients on interest rate risk management strategies.”

148. By way of example only, Barclays plc marketed and sold approximately \$3.6 billion in floating rate notes expressly indexed to USD ICE LIBOR to investors, including those in the United States.⁵⁴ On January 10, 2017, Barclays plc issued, within the United States, \$750 million in notes at a floating expressly indexed to 3-month USD ICE LIBOR, reset quarterly plus 1.625% per annum.

⁵³ 2018 US Resolution Plan, Barclays PLC, at 9.

⁵⁴ Barclays, <https://bit.ly/2KOhe38>.

149. On January 11, 2018, Barclays Bank issued, within the United States, \$1 billion in notes that make quarterly floating rate payments expressly indexed to 3-month USD ICE LIBOR plus 0.46% per annum.

150. On October 21, 2016, a subsidiary of Barclays Bank issued \$2 million in certificates of deposit expressly indexed to USD ICE LIBOR. The calculation agent for this issuance was Barclays Bank.

151. Barclays Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

152. Barclays Bank represented the Barclays Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

e. BNP Paribas Defendants

153. Defendant BNP Paribas S.A. ("BNPP") is a French Société Anonyme with its principal place of business at 16 Blvd. des Italiens, 75009 Paris, France, and operates a New York branch at 787 Seventh Avenue, New York, New York 10019.

154. Defendant BNP Paribas Securities Corp. ("BNPS") is a Delaware corporation with its principal place of business at 787 Seventh Avenue, New York, New York 10019.

155. BNPP is licensed, supervised, and regulated to do business in this state by the NYSDFS. BNPP is also regulated by the Board of Governors of the Federal Reserve System. BNPP considers its New York branch to be a Material Entity within the United States.⁵⁵ BNPP is a provisionally registered dealer with the CFTC.

⁵⁵ *BNP Paribas 165(d) Resolution Plan, Public Section*, BNP Paribas, at 3 (July 1, 2013), <https://www.federalreserve.gov/bankinfo/reg/resolution-plans/bnp-paribas-2g-20130701.pdf>.

156. Unless stated otherwise, Defendants BNPP and BNPS and their subsidiaries and affiliates, are referenced collectively in this Complaint as “BNP Paribas” or the “BNP Paribas Defendants.”

157. During the Class Period, the BNP Paribas Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

158. Each named BNP Paribas Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named BNP Paribas Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one BNP Paribas Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one BNP Paribas Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

159. By way of example only, on August 13, 2013, BNPP issued \$2.15 billion of senior unsecured notes expressly indexed to 3-month USD ICE LIBOR.⁵⁶ On January 3, 2019, BNPP issued \$1.7 billion in senior non-preferred fixed-to-floating rate notes expressly indexed to 3-month USD ICE LIBOR.⁵⁷ On January 3, 2019, BNPP issued \$900 million in senior non-preferred

⁵⁶ BNP Paribas, *available at* <https://invest.bnpparibas.com/en/debts/senior-unsecured-debt-issues/benchmark-issues-senior-unsecured>.

⁵⁷ *See* BNP Paribas, <https://bit.ly/2IYr3cX>.

fixed-to-floating rate notes expressly indexed to 3-month USD ICE LIBOR.⁵⁸ On December 5, 2013 BNPP, acting through its New York Branch, issued \$350 million of 3-year floating rate notes which paid interest expressly indexed to 3-month USD ICE LIBOR.⁵⁹

160. During the Class Period, BNPP employed traders in the United States who traded in USD ICE LIBOR Financial Instruments with U.S. customers and for their own proprietary account, including Matthieu Bonjean and Tim Kearney, USD interest rate traders based in BNPP's New York City office.

161. During the Class Period, BNPP employed sales teams in the United States who sold USD ICE LIBOR Financial Instruments to U.S. investors, including Ira Rudman, a director in BNPP's New York City office and head of institutional sales for the Americas who specializes in rates and derivatives sales.

162. BNPS is a U.S.-based market maker and a primary broker-dealer providing BNPP's customers with access to U.S. dollar markets, including financial products expressly indexed to USD ICE LIBOR.⁶⁰ BNPS engages in derivatives transactions in the United States, including USD ICE LIBOR Financial Instruments, with clients located in the United States and for its own proprietary trading account.⁶¹

163. BNP Paribas Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

164. BNPP represented BNP Paribas Defendants as a submitter on the USD ICE LIBOR panel from 2014 through late 2018, during the Class Period.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ BNP Paribas 2018 Resolution Plan at 9.

⁶¹ BNP Paribas 2018 Resolution Plan at 18

f. Credit Agricole Defendants

165. Defendant Crédit Agricole S.A. (“Credit Agricole SA”) is a French Société Anonyme with its principal place of business at 12 place des États-Unis, 92545 Montrouge Cedex, France.

166. Defendant Crédit Agricole Corporate and Investment Bank (“Credit Agricole CIB”) is organized and existing under the laws of France with its principal place of business at 9, Quai du Président Paul Doumer, 92920 Paris La Défense Cedex, France, and it operates a New York branch at Crédit Agricole Building, 1301 Avenue of the Americas, New York, New York 10019.

167. Defendant Crédit Agricole Securities (USA) Inc. (“Credit Agricole USA”) is a New York corporation with its principal place of business at Crédit Agricole Building, 1301 Avenue of the Americas, New York, New York 10019.

168. Credit Agricole CIB is licensed, supervised, and regulated by the NYSDFS. Credit Agricole CIB is a provisionally registered dealer with the CFTC. Credit Agricole CIB stated in its Resolution Plan with FDIC that “[t]he CACIB NY Branch is a branch of CACIB and, thus, is not a separate legal entity,” and is a Material Entity “significant to the activities of a critical operation or core business line.”⁶² Credit Agricole CIB also listed Credit Agricole Securities (USA) Inc. as a Material Entity in its FDIC Resolution Plan.⁶³

169. Unless stated otherwise, Defendants Credit Agricole SA, Credit Agricole CIB, and Credit Agricole USA, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Credit Agricole” or the “Credit Agricole Defendants.”

⁶² *Crédit Agricole S.A. U.S. Resolution Plan, Public Section*, Crédit Agricole S.A., at 6 (Dec. 24, 2015), <https://www.fdic.gov/regulations/reform/resplans/plans/casa-165-1512.pdf>.

⁶³ *Id.*

170. During the Class Period, the Credit Agricole Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

171. Each named Credit Agricole Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Credit Agricole Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one Credit Agricole Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one Credit Agricole Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

172. During the Class Period, Credit Agricole SA, through its subsidiaries, employed sales teams in the United States who sold USD ICE LIBOR Financial Instruments to U.S. customers, including Karen Orczyk, a managing director of rate sales in Credit Agricole CIB's New York office who oversees a "sales team responsible for developing and expanding the interest rate platform in the United States" and whose "[t]arget account coverage includes Tier 1 asset managers, pension funds, hedge funds, insurance companies and corporations."

173. By way of example only, on March 26, 2015, Credit Agricole CIB issued \$1.828 billion in subordinated debt, which paid interest expressly indexed to 3-month USD ICE LIBOR

plus 252 basis points.⁶⁴ On June 9, 2016, Credit Agricole CIB issued \$800 million in subordinated debt that paid interest expressly indexed to 3-month USD ICE LIBOR plus 686 basis points.⁶⁵

174. Credit Agricole USA, as a U.S. registered broker-dealer with the SEC and CFTC, engages in investment banking activities and deals in derivatives in the United States, including USD ICE LIBOR-based derivatives.⁶⁶

175. Credit Agricole CIB represented Credit Agricole Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

g. Credit Suisse Defendants

176. Defendant Credit Suisse Group AG is a Swiss aktiengesellschaft with its principal place of business at 8 Paradeplatz, 8001 Zurich, Switzerland.

177. Defendant Credit Suisse AG is a Swiss aktiengesellschaft with its principal place of business at Ueltibergstrasse 231, 8070 Zurich, Switzerland, and it operates a New York branch located at Eleven Madison Avenue, 24th Floor, New York, New York 10010.

178. Defendant Credit Suisse Securities (USA) LLC (“Credit Suisse USA”) is a Delaware limited liability company with its principal place of business at Eleven Madison Avenue, 24th Floor, New York, New York 10010.

179. Credit Suisse AG is licensed, supervised, and regulated by the NYSDFS to do business in this state. Credit Suisse AG is also licensed and supervised by the Board of Governors

⁶⁴ Registration Document Credit Agricole CIB 2017 at 205. EUR 1,700 million conversion rate as of March 31, 2015: 0.9300 EUR= 1 USD. *See* U.S. Department of the Treasury, *Historical Rates*, <https://bit.ly/2ZX98J2>.

⁶⁵ Credit Agricole CIB 2017 Registration Document at 204. EUR 720 million conversion rate as of June 30, 2016: 0.9000 EUR= 1 USD. *See* U.S. Department of the Treasury, *Historical Rates*, <https://bit.ly/2ZX98J2>.

⁶⁶ Credit Agricole S.A. 2018 U.S. Resolution Plan at 6.

of the Federal Reserve System. Credit Suisse AG listed its New York branch and Credit Suisse Securities (USA) LLC as Material Legal Entities in its FDIC Resolution Plan.⁶⁷ Credit Suisse AG listed Credit Suisse USA as a Material Legal Entity in its FDIC Resolution Plan.⁶⁸

180. Unless stated otherwise, Defendants Credit Suisse Group AG, Credit Suisse AG, and Credit Suisse Securities (USA) LLC, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Credit Suisse” or the “Credit Suisse Defendants.”

181. During the Class Period, the Credit Suisse Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

182. Each named Credit Suisse Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Credit Suisse Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one Credit Suisse Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one Credit Suisse Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

⁶⁷ *Credit Suisse, 2018 U.S. Resolution Plan Public Section*, Credit Suisse (June 28, 2018), <https://www.fdic.gov/regulations/reform/resplans/plans/creditsuisse-165-1807.pdf>.

⁶⁸ *Id.*

183. During the Class Period, Credit Suisse Group AG, through its subsidiaries, employed traders in the United States who traded in USD ICE LIBOR-based derivatives with U.S. customers and for their own proprietary account, including Akash Agrawal, the head of USD swaps in Credit Suisse AG's New York City office.

184. By way of example only, in 2018, Defendant Credit Suisse AG issued \$750 million in three-month senior unsecured notes expressly indexed to 3-month USD ICE LIBOR and \$4.09 billion in senior unsecured notes expressly indexed to USD ICE LIBOR.⁶⁹

185. Credit Suisse AG's New York Branch provides investment banking, private banking and asset management services to U.S.-based customers, which comprises market making activities and trading in USD ICE LIBOR Financial Instruments.

186. Credit Suisse Securities (USA) LLC is a U.S. registered broker-dealer and futures commission merchant, engages in transactions in USD ICE LIBOR Financial Instruments in the United States.

187. Credit Suisse Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

188. Credit Suisse AG represented Credit Suisse Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

h. Deutsche Bank Defendants

189. Defendant Deutsche Bank AG ("DBAG") is a German aktiengesellschaft with its principal place of business at Taunusanlage 12, Frankfurt, 60325, Germany, and it operates a New York branch at 60 Wall Street, 4th Floor, New York, New York 10005.

⁶⁹ Credit Suisse Group AG, 2018 Annual Report at 426.

190. Defendant Deutsche Bank Securities Inc. (“DBSI”) is a Delaware corporation with its principal place of business at 60 Wall Street, 4th Floor, New York, New York 10005.

191. DBAG considers its New York branch and Deutsche Bank Securities Inc. to be “Material Entities” within the United States.⁷⁰ DBAG is licensed, supervised, and regulated by the NYSDFS to do business in this state. DBAG is also registered with the Board of Governors of the Federal Reserve System. DBAG is a provisionally registered dealer with the CFTC.

192. Unless stated otherwise, Defendants DBAG and DBSI, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Deutsche Bank” or “Deutsche Bank Defendants.”

193. During the Class Period, the Deutsche Bank Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

194. Each named Deutsche Bank Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Deutsche Bank Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one Deutsche Bank Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one Deutsche Bank Defendant directly issued, sold, or otherwise

⁷⁰ *Deutsche Bank, U.S. Resolution Plan, July 2014 Submission, Section 1: Public Section*, Deutsche Bank AG, at 4 (July 1, 2014), <https://www.fdic.gov/regulations/reform/resplans/plans/deutschebank-idi-1407.pdf>.

transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

195. By way of example only, DBAG reported issuing \$37.9 billion in debt securities within the U.S., including debt instruments expressly indexed to USD ICE LIBOR. On May 24, 2013, DBAG issued \$1.5 million in subordinated notes expressly indexed to 3-month USD ICE LIBOR. The lead book-running manager for these notes was DBSI.⁷¹ As of March 31, 2019, DBAG reported \$4 billion in subordinated liabilities that were issued in the United States and denominated in U.S. dollars, including \$2.5 billion in subordinated liabilities with rates expressly indexed to USD ICE LIBOR.⁷²

196. During the Class Period, DBAG employed traders in the United States who traded in USD ICE LIBOR Financial Instruments, including Varun Nayyar, a director and rates trader based in DBAG's New York City office who trades in short-term interest rate products and interest rate swaps. DBAG's sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to US investors. For example, Jessica Dahlman is part of the rates sales team in Deutsche Bank's New York City offices.

197. Deutsche Bank's U.S. dollar funding desk was located in New York City during the Class Period.

198. DBAG represented Deutsche Bank Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

⁷¹ *Capital Instruments*, Deutsche Bank AG Prospectus, \$1.5 million issued 05/24/2013, Deutsche Bank, available at https://www.db.com/ir/en/capital-instruments.htm#tab_tier-2.

⁷² *Capital Instruments*, Deutsche Bank, <https://bit.ly/2XmRodz>.

i. HSBC Defendants

199. Defendant HSBC Holdings plc (“HSH”) is a British public limited company with its principal place of business at 8 Canada Square, London, E14 5HQ, United Kingdom.

200. Defendant HSBC Bank plc (“HSB”) is a British public limited company with its principal place of business at 8 Canada Square, London, E14 5HQ, United Kingdom.

201. Defendant HSBC Bank USA, N.A. (“HSUS”) is a national banking association headquartered at HSBC Tower, 452 Fifth Avenue, New York, New York 10018.

202. Defendant HSBC Securities (USA) Inc. (“HSSUS”) is a Delaware corporation with its principal place of business at HSBC Tower, 452 Fifth Avenue, New York, New York 10018.

203. HSH is licensed and supervised by the Board of Governors of the Federal Reserve System and FDIC. HSH and HSB named HSUS as its “principal US banking subsidiary” and a Material Entity in its Federal Reserve Resolution Plan.⁷³

204. Unless stated otherwise, Defendants HSH, HSB, HSUS, and HSSUS, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “HSBC” or the “HSBC Defendants.”

205. During the Class Period, the HSBC Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

206. Each named HSBC Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named

⁷³ *HSBS Bank USA, NA IDI Plan, Section I, Public Section*, HSBC, at 11 (July 2018), <https://www.fdic.gov/regulations/reform/resplans/plans/hsbc-idi-1807.pdf>.

HSBC Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one HSBC Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one HSBC Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

207. HSH reported that the *U.S. dollar is the “most significant currenc[y] relevant to the underlying transactions, events and conditions of its subsidiaries, as well as representing a significant proportion of its funds generated from financing activities.”*⁷⁴

208. By way of example only, HSH reported \$50.1 billion in senior notes issued in the United States and denominated in U.S. dollars.⁷⁵ \$24 billion of these notes are floating rate or fixed-to-floating rate that are expressly indexed to USD ICE LIBOR.⁷⁶ On May 25, 2016, HSH issued \$1 million in senior unsecured notes paying interest expressly indexed to 3-month USD LIBOR plus 1.66% per annum. The notes were underwritten by HSSUS.⁷⁷ HSBC Holdings plc made other similar issuances throughout the Class Period. HSB reported \$2.5 million in senior notes, \$450 million in subordinated floating rate notes, \$3.8 billion in fixed rate subordinated notes and loans, and \$2.7 billion in floating rate subordinated loans that were issued in the United States

⁷⁴ HSBC Holdings PLC, 2018 Annual Report and Accounts, at 225.

⁷⁵ *Fixed Income Securities*, HSBC Holdings plc, <https://www.hsbc.com/investors/fixed-income-investors/fixed-income-securities/hsbc-holdings-plc?page=1&take=100> (review of each floating rate and floating/fixed rate terms/prospectus).

⁷⁶ *Id.*

⁷⁷ *Id.*

and denominated in U.S. dollars.⁷⁸ HSB also reported \$1.5 billion in floating rate primary capital notes issued in the United States and expressly linked to USD ICE LIBOR rates.

209. HSUS, one of HSH's principal banking subsidiaries, offers a full range of banking products and related financial services to customers in the United States, including transacting in USD ICE LIBOR Financial Instruments.

210. HSUS's sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to US investors. For example, Joe Mastrocola is a managing director of corporate rate derivative sales in HSUS's New York City office and markets rates derivatives, including those expressly indexed to USD ICE LIBOR, to large U.S. corporations.

211. HSSUS, as a U.S. registered broker-dealer and CFTC registered futures commission merchant, regularly transacted in USD ICE LIBOR Financial Instruments in the United States.

212. HSSUS participates as an underwriter for HSH's subsidiaries domestic issuances of term debt, including issuances expressly linked to USD ICE LIBOR. The underwriting fees and commissions have "historically have benefited the HSBC Group."⁷⁹

213. HSBC Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

214. HSB represented HSBC Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

⁷⁸ *Id.*

⁷⁹ HSBC USA Inc., Annual Report at 4 (Form 10-K) (Dec. 31, 2017).

j. Lloyds Defendants

215. Defendant Lloyds Bank plc is a British public limited company with registered offices at 25 Gresham Street, London EC2V 7HN, United Kingdom, and it operates a New York branch at 1095 Sixth Avenue, New York, New York 10036.

216. Defendant Lloyds Securities Inc. is a Delaware corporation headquartered at 1095 Sixth Avenue, New York, New York 10036.

217. Lloyds Bank plc is licensed, supervised, and regulated by the NYSDFS to do business in this state. Lloyds Bank plc listed its New York branch as a Material Entity in its FDIC Resolution Plan stating that it was “significant to the activities of a core business line or critical operation” and “the primary operating entity for LBG’s U.S. operations.”⁸⁰

218. Unless stated otherwise, Defendants Lloyds Bank plc and Lloyds Securities Inc., and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Lloyds” or the “Lloyds Defendants.”

219. During the Class Period, the Lloyds Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

220. Each named Lloyds Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Lloyds Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one Lloyds Defendant

⁸⁰ *Resolution Plan, Public Section*, Lloyds Banking Group, at 4 (Dec. 31, 2016), <https://www.fdic.gov/regulations/reform/resplans/plans/lloyds-165-1612.pdf>.

directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one Lloyds Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States

221. By way of example only, Lloyds Bank plc issued a total of \$91.5 billion in debt securities by year-end 2016, including debt securities expressly indexed to USD ICE LIBOR. This included \$29 billion in medium-term notes, \$50.5 billion in covered bonds, \$10 billion in certificates of deposit, \$1.3 billion in commercial paper. On November 15, 2018, Lloyds Bank plc issued \$750 million in floating rate covered bonds into the U.S. market that paid interest expressly indexed to 1-month LIBOR plus 0.32% per annum.

222. During the Class Period Lloyds Bank plc employed traders in the United States who traded in USD ICE LIBOR Financial Instruments, including Shangrong Lin, a rates trader in Lloyds Bank PLC's New York City office, who specializes in USD interest rate swaps.

223. Lloyds Bank plc's sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to U.S. investors. For example, Caroline Oehm, a director at Lloyds Bank plc is responsible for "client coverage and new client origination" and markets USD ICE LIBOR Financial Instruments to U.S. investors.

224. Lloyds Bank plc represented Lloyds Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

k. MUFG Defendants

225. Defendant MUFG Bank, Ltd. (f/k/a The Bank of Tokyo-Mitsubishi UFJ Ltd.) ("MUFG Bank") is a bank organized under the laws of Japan with its principal place of business

at 7-1, Marunouchi 2-chome Chiyoda-ku, Tokyo 100-8388, Japan. MUFG Bank operates a New York branch at 1251 Sixth Avenue, New York, New York 10020.

226. Defendant Mitsubishi UFJ Financial Group Inc. (“MUFG Group”) is a Japanese corporation with its principal place of business at 7-1, Marunouchi 2-chome Chiyoda-ku, Tokyo 100-8388, Japan.

227. Defendant MUFG Securities Americas Inc. (“MUFG Securities”) is a Delaware corporation with its principal place of business at 1251 Sixth Avenue, New York, New York 10020.

228. MUFG Group is regulated by the Board of Governors of the Federal Reserve System. The New York branch was listed as a Material Entity in its FDIC resolution plan.⁸¹ MUFG Group listed MUFG Securities as a Material Entity in its FDIC Resolution Plan.⁸²

229. Unless stated otherwise, MUFG Bank, MUFG Group, and MUFG Securities, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “MUFG” or the “MUFG Defendants.”

230. During the Class Period, the MUFG Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

231. Each named MUFG Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named MUFG Defendant engaged in one or more types of suit-related conduct in, or purposefully directed

⁸¹ *Public: Mitsubishi UFJ Financial Group, Inc., Resolution Plan*, MUFG, at 5, <https://www.fdic.gov/regulations/reform/resplans/plans/mufj-165-1412.pdf>.

⁸² *Id.*

toward, the United States and this District during the Class Period. At least one MUFG Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one MUFG Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

232. During the Class Period MUFG Bank employed traders in the United States who traded in USD ICE LIBOR Financial Instruments, including John Darling who was a vice president and senior swap and options trader who transacted in interest rate swaps, including those expressly indexed to USD ICE LIBOR.

233. MUFG Bank sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to U.S. investors. For example, Danny Mejia, specializes in the sales of derivatives and structured finance products, including those expressly indexed to USD ICE LIBOR, and is based in MUFG Bank's New York office.

234. By way of example only, MUFG Bank reported issuing \$19.2 billion in floating rate notes expressly indexed to USD ICE LIBOR.⁸³ On July 26, 2018, MUFG Bank issued within the U.S. \$750 million in floating rate notes that paid interest expressly indexed to 3-month LIBOR plus 0.74%. MUFG Bank, through its branch in New York City, enters into swap transactions expressly indexed to USD ICE LIBOR. On May 24, 2017, MUFG Bank's New York Branch entered into a swap transaction of \$50 million with a floating rate expressly indexed to 1-month

⁸³ *MUFG Debt and Capital Securities Information*, MUFG, https://www.mufg.jp/english/ir/fixed_income/debt/#senior.

USD LIBOR. This branch is not a separate legal entity but a direct extension of MUFG Bank Ltd. into the United States⁸⁴

235. MUFG Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

236. MUFG Bank represented MUFG Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

I. Norinchukin Defendant

237. Defendant The Norinchukin Bank ("Norinchukin") is a Japanese bank organized and operated under the laws of Japan with its principal place of business at 1-12, Uchikanda 1-chome, Chiyoda-ku, Tokyo 101-0047, Japan, and it operates a New York branch located at 245 Park Avenue, Floor 21, New York, New York 10167.

238. Norinchukin is licensed, supervised, and regulated by the NYSDFS to do business in this state. Norinchukin listed the New York branch as a Material Entity in its Federal Reserve Resolution Plan.⁸⁵ Norinchukin is regulated by the Board of Governors of the Federal Reserve System.

239. Norinchukin's website describes how the bank "built a global network using overseas sites," including offices in New York and London, which allow the bank to manage their "globally diversified investments."⁸⁶

⁸⁴ *MUFG PS Confirmation (Amendment)*, SEC (May 26, 2017), <https://bit.ly/2X7V7Xm>.

⁸⁵ *U.S. Resolution Plan, Section 1: Public Section*, The Norinchukin Bank, at 3 (Dec. 24, 2013), <https://www.federalreserve.gov/bankinforeg/resolution-plans/norinchukin-bk-3g-20131231.pdf>.

⁸⁶ *Pursuing stable profit as the ultimate manager of funds for JA Bank and JF Marine Bank*, The Norinchukin Bank, <https://www.nochubank.or.jp/en/about/business/investment.html> (last visited June 26, 2019).

240. During the Class Period, Norinchukin operated in furtherance of the conspiracy and purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

241. Norinchukin was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Norinchukin engaged in suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. Norinchukin directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and it also directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

242. Norinchukin's New York branch offers corporate finance, securities investment services, short-term money market transactions, certificates of deposit, fund transfer, and financial derivatives products, including USD ICE LIBOR Financial Instruments. Norinchukin's New York branch engages in interest rate swaps expressly indexed to USD ICE LIBOR. Norinchukin's New York branch is not a separate legal entity but a direct extension of Norinchukin into the United States.

243. Norinchukin's New York branch executes transactions in the U.S. markets in cooperation with the Norinchukin's funding desk in accordance with the Norinchukin's risk management policies and limits.

244. Norinchukin was a submitter on the USD ICE LIBOR Panel during the Class Period.

m. Rabobank Defendant

245. Defendant Coöperatieve Rabobank U.A. (“Rabobank”) is a bank organized under the laws of Netherlands with its principal place of business at Croeselaan 18, 3521 CB Utrecht, Netherlands, and operates a New York branch at 245 Park Avenue, 37th Floor, New York, New York 10167.

246. Rabobank is licensed, supervised, and regulated by the NYSDFS to do business in this state. Rabobank listed its New York branch as a Material Entity in its FDIC Resolution Plan.⁸⁷ Rabobank is regulated by the Board of Governors of the Federal Reserve System.

247. During the Class Period, Rabobank operated in furtherance of the conspiracy and purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

248. Rabobank was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Rabobank engaged in suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. Rabobank directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and it directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

249. Rabobank’s wholesale banking activities in the United States, including transactions in USD ICE LIBOR Financial Instruments, are conducted through its New York

⁸⁷ *U.S. Resolution Plan, Public Section*, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (Rabobank Nederland), at 4 (Dec. 14, 2015), <https://www.fdic.gov/regulations/reform/resplans/plans/ccrb-165-1512.pdf>.

branch, a material entity according to their U.S. Resolution Plan, which is not a separate legal entity from Rabobank but a direct extension into the U.S. market.

250. In the United States, Rabobank provides access to debt markets, equity markets, and interest rate, foreign exchange, and commodity derivatives, including those expressly linked to USD ICE LIBOR. Rabobank reported in its 2018 Annual Report that it has “significant contractual rights and obligations referenced to benchmark rates,” including USD ICE LIBOR.

251. During the Class Period, Rabobank employed traders in the United States, who traded in USD ICE LIBOR Financial Instruments with U.S. investors, including Alexander Apter, an associate vice president of interest rate derivatives in Rabobank’s New York office.

252. Rabobank sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to U.S. investors. For example, Karen Basu, based in Rabobank’s New York office, is Rabobank’s executive director of financial institutions derivatives sales and is the “[p]rimary salesperson for fixed income derivative products to SSAs, financial institutions and banks in the Americas.” Basu is responsible for maintaining relationships with U.S.-based customers and markets interest rate swaps, including those expressly indexed to USD ICE LIBOR.

253. Rabobank, through its U.S. subsidiaries, issues bonds expressly indexed to USD ICE LIBOR to U.S. investors. For example, on August 9, 2016, Rabobank’s New York Branch issued \$400 million in senior notes that paid interest expressly indexed to 3-month USD ICE LIBOR plus 51 basis points.⁸⁸

⁸⁸ Rabobank, <https://bit.ly/2XG7SN>.

254. Additionally, Rabobank’s “top-tier” U.S. holding company, based in New York City, reported \$6.7 billion in interest-rate swap off-balance sheet transactions in 2018, including USD ICE LIBOR Financial Instruments with U.S. investors.⁸⁹

255. Rabobank’s U.S. dollar funding desk was located in New York City during the Class Period.

256. Rabobank was a submitter on the USD ICE LIBOR Panel during the Class Period.

n. RBC Defendants

257. Defendant Royal Bank of Canada (“RBC”) is a chartered Schedule I Bank under the Canada Bank Act with its principal place of business at 200 Bay Street, Toronto, Ontario M5J 2J5, Canada, and it operates a New York branch at Three World Financial Center, 200 Vesey Street, 8th Floor, New York, New York 10281.

258. Defendant RBC Capital Markets, LLC (“RBC Capital”) is a Minnesota limited liability company with its principal place of business and headquarters located at Three World Financial Center, 200 Vesey Street, 8th Floor, New York, New York 10281.

259. Royal Bank of Canada listed its New York branch as a Material Entity “that is significant to the activities of a critical operation or core business” in its FDIC Resolution Plan.⁹⁰ RBC is regulated by the Board of Governors of the Federal Reserve System.

260. RBC listed RBC Capital as a Material Entity “that is significant to the activities of a critical operation or core business” in its FDIC Resolution Plan.⁹¹

⁸⁹ Board of Governors of the Federal Reserve System, Bank Holding Company Performance Report (December 31, 2018).

⁹⁰ *U.S. Resolution Plan, Section I – Public Section*, Royal Bank of Canada, at 5 (Dec. 2015), <https://www.fdic.gov/regulations/reform/resplans/plans/rbc-165-1512.pdf>.

⁹¹ *Id.*

261. Unless stated otherwise, Royal Bank of Canada and RBC Capital, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “RBC” or the “RBC Defendants.”

262. During the Class Period, the RBC Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

263. Each named RBC Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named RBC Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one RBC Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one RBC Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

264. In the United States, *RBC’s “second home market”*, RBC reports generating 23% of its total revenue in 2018.⁹² This includes revenue from transactions in USD ICE LIBOR Financial Instruments.

265. By way of example only, RBC reported that as of October 31, 2017, its interest rate exposure to derivatives, including those expressly indexed to USD ICE LIBOR, entered into as

⁹² Royal Bank of Canada 2018 Resolution Plan at 8.

cash flow hedges was approximately \$6.1 million per basis point.⁹³ RBC issued floating rate notes expressly indexed to USD ICE LIBOR in the United States to fund its operations during the Class Period. For example, on April 29, 2019, RBC issued \$500,000,000 senior floating rate notes in U.S. dollars that paid interest expressly indexed to 3-month USD ICE LIBOR plus 0.470% each quarter.⁹⁴ On January 8, 2016, RBC issued \$40 billion in senior global medium-term notes within the U.S., including notes with floating interest rates expressly indexed to USD ICE LIBOR.⁹⁵ The indenture and the notes are governed by and construed in accordance with the laws of the State of New York.

266. RBC Capital offers investment banking products such as floating rate notes expressly indexed to a 3-month USD ICE LIBOR. RBC Capital's office serves as the bank's trading hub within the United States.

267. During the Class Period, RBC Capital employed traders in the United States who transacted in USD ICE LIBOR-based derivatives, including Joe Lu, a derivatives trader on RBC Capital's USD interest rates swap desk in New York City and Anthony Inocentes, a fixed income rates trader in RBC's New York City office.

268. RBC Defendants' U.S. dollar funding desk was located in New York City during the Class Period.

⁹³ Royal Bank of Canada 2018 Annual Report at 70.

⁹⁴ The notes are part of a series of senior debt securities of the Bank entitled "Senior Global Medium-Term Notes Series H" and refers to prospectus Dated September 7, 2018. The prospectus states that the interest rate on a floating rate note will in no event be higher than the maximum rate permitted by New York law. The prospectus stipulates that the indenture and the notes are governed by and construed in accordance with the laws of the State of New York. *See RBC Subordinated Debt*, <http://www.rbc.com/investorrelations/subordinated-debt.html>.

⁹⁵ *See* Royal Bank of Canada Prospectus Supplement to Prospectus dated January 8, 2016.

269. Royal Bank of Canada represented RBC Defendants as a submitter on the USD ICE LIBOR panel during the Class Period.

o. RBS Defendants

270. Defendant The Royal Bank of Scotland Group plc (“RBS Group”) is a United Kingdom public limited company with its principal place of business at 1000 Gogarburn, Edinburgh, EH12 1HQ, Scotland.

271. Defendant NatWest Markets plc (f/k/a The Royal Bank of Scotland plc) (“Natwest Markets”) is a United Kingdom public limited company with its principal place of business located at 36 St. Andrew Square, Edinburgh, EH2 2YB, Scotland, and it operates a Connecticut branch located at 600 Washington Boulevard, Stamford, Connecticut 06901. During the Class Period, Royal Bank of Scotland maintained a branch at 600 Washington Boulevard, Stamford, Connecticut 06901.

272. Defendant National Westminster Bank plc (“Natwest Bank”) is a U.K. public limited company with its principal place of business at 135 Bishopsgate, London, EC2M 3UR, United Kingdom. During the Class Period, Natwest Bank was a member of the USD ICE LIBOR Panel.

273. Defendant NatWest Markets Securities Inc. (f/k/a RBS Securities Inc.) (“Natwest Securities”) is a Delaware corporation with its principal place of business at 600 Washington Boulevard, Stamford, Connecticut 06901.

274. RBS Group is regulated by the Board of Governors of the Federal Reserve System and is registered with CFTC. RBS Group listed its Connecticut branch as a Material Entity in its FDIC Resolution Plan.⁹⁶

275. Unless stated otherwise, RBS Group, Natwest Markets, Natwest Bank, and Natwest Securities, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “RBS” or the “RBS Defendants.”

276. During the Class Period, the RBS Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

277. Each named RBS Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named RBS Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. At least one RBS Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one RBS Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

278. By way of example only, RBS Group issued \$9.2 billion in subordinated notes, including \$350 million in floating-rate notes, and \$5.8 in contingent capital notes, which include

⁹⁶ *Public Section The Royal Bank of Scotland Group plc Resolution Plan*, RBS, at i-6, <https://www.fdic.gov/regulations/reform/resplans/plans/rbs-165-1512.pdf>.

notes expressly indexed to USD ICE LIBOR.⁹⁷ On April 10, 2007, RBS Group plc issued \$1.6 million in preferred capital securities at a fixed-to-floating rate expressly indexed to USD ICE LIBOR. On October 5, 2017, the interest rate of these securities expressly reset to 3-month USD LIBOR plus 2.67%. Other similar issuances based on USD ICE LIBOR have occurred throughout the Class Period.

279. During the Class Period RBS employed traders in the United States who transacted in USD ICE LIBOR-based derivatives, including Richard Volpe, RBS's global head of dollar interest rate trading in their New York City office, and Dimitri Mongeot, a vice president who traded in USD interest rate swaps expressly indexed to USD ICE LIBOR in RBS's New York office.

280. RBS sales teams in the United States marketed and sold USD ICE LIBOR Financial Instruments to U.S. investors. For example, Hamid Khalique was part of RBS's US Risk Solutions Sales team based in New York City.

281. Royal Bank of Scotland and NatWest Bank represented RBS Defendants as submitters on the USD ICE LIBOR panel during the Class Period.

p. Societe Generale Defendants

282. Defendant Société Générale S.A. (Societe Generale S.A.) is a French Société Anonyme with its principal place of business at 29, Boulevard Haussmann, 75009 Paris, France. During the Class Period, Societe Generale S.A. was a member of the USD ICE LIBOR Panel. Societe Generale S.A. maintains a New York branch at 245 Park Avenue, New York, New York 10167.

⁹⁷ *Unsecured Securities Documentation*, RBS, <https://investors.rbs.com/fixed-income-investors/unsecured-securities-documentation/securities-disclaimer.aspx>.

283. Defendant SG Americas Securities, LLC (“SG Americas”) is a Delaware limited liability company, with its principal place of business at 245 Park Avenue, New York, New York 10167.

284. Societe Generale S.A. listed its New York branch as a Material Entity through which its Global Banking and Investor Solutions core business is conducted in its Federal Reserve Resolution Plan.⁹⁸ Societe Generale S.A.’s New York branch is licensed, supervised, and regulated by the NYSDFS to do business in this state.

285. Societe Generale S.A. listed SG Americas as a Material Entity through which its core business is conducted in its Federal Reserve Resolution Plan.⁹⁹

286. Unless stated otherwise, Defendants Societe Generale S.A., SG Americas, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “Societe Generale” or the “Societe Generale Defendants.”

287. During the Class Period, the Societe Generale Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

288. Each named Societe Generale Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Societe Generale Defendant engaged in one or more types of suit-related conduct in or purposefully directed toward the United States and this District during the Class Period. At least one Societe Generale Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for

⁹⁸ 2015 U.S. Resolution Plan, Société Générale, at 2-3, <https://www.federalreserve.gov/bankinfo/reg/resolution-plans/societe-generale-3g-20151231.pdf>.

⁹⁹ *Id.*

calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, and at least one Societe Generale Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

289. Societe Generale S.A. offers brokerage services and sells derivative instruments including USD ICE LIBOR Financial Instruments to clients located in the United States. Societe Generale S.A.’s Prime Services department provides a single point of access to 130 worldwide markets and execution venues with a “follow-the-sun” electronic and semi-electronic service “making it possible to meet customer requirements at all times” including to customers located in the United States.¹⁰⁰

290. During the Class Period, Societe Generale S.A. employed traders in New York City that transacted in USD ICE LIBOR Financial Instruments. For example, Florent Ajas, a Director at Societe Generale S.A. who supervised USD interest rate swap market making functions in Societe Generale S.A.’s New York City office and Andrew Barragry, a director of USD rates trading in Société Générale S.A.’s New York City office.

291. By way of example only, in 2016 Societe Generale S.A. issued \$500 million in Senior unsecured notes that paid interest expressly indexed to 3-month USD LIBOR plus 133 basis points. In 2018, Societe Generale S.A. and its subsidiaries issued a total of \$133.4 billion of debt

¹⁰⁰ Société Générale Group 2018 Registration Document-Annual Financial Report 2017, at 25.

securities including over \$44 billion of floating-rate notes, which included notes expressly indexed to USD ICE LIBOR.¹⁰¹

292. As of December 31, 2016, Defendant SG Americas held approximately \$40 million in derivative contracts traded in the United States, which included contracts expressly indexed to USD ICE LIBOR.¹⁰²

293. Societe Generale S.A. represented the Societe Generale Defendants on the USD ICE LIBOR panel from 2014 through late 2017, during the Class Period.

q. Sumitomo Defendants

294. Defendant Sumitomo Mitsui Banking Corporation is a bank organized under the laws of Japan with its principal place of business at 1-1-2, Marunouchi, Chiyoda-ku, Tokyo, Japan, and it operates a New York branch at 277 Park Avenue, New York, New York 10172.

295. Defendant Sumitomo Mitsui Financial Group Inc. is a Japanese corporation organized under the laws of Japan with its principal place of business at 1-1-2, Marunouchi, Chiyoda-ku, Tokyo, Japan.

296. Defendant Sumitomo Mitsui Banking Corporation Europe Ltd. is a U.K. public limited company with its principal place of business at Temple Court, 11 Queen Victoria Street, London, EC4N 4TA, United Kingdom.

297. SMBC Capital Markets, Inc. is a Delaware corporation with its principal place of business at 277 Park Avenue, New York, New York 10172.

¹⁰¹ Société Générale Group 2019 Registration Document- 2018 Annual Financial Report at 349, 370. EUR 39,121 million; conversion rate: 0.8720 EUR= 1 USD see Official website of the U.S. Government at <https://www.fiscal.treasury.gov/reports-statements/treasury-reporting-rates-exchange/historical.html>.

¹⁰² SG Americas Securities, LLC Statement of Financial Condition, Dec. 31, 2016 at 16.

298. Sumitomo Mitsui Banking Corporation's New York branch is licensed, supervised, and regulated by the NYSDFS to do business in this state. Sumitomo listed its New York branch as a Material Entity in its Federal Reserve Resolution Plan.¹⁰³

299. Sumitomo listed SMBC Capital Markets as a Material Entity that is "significant to the activities of a critical operation or core business line" in its Federal Reserve Resolution Plan.¹⁰⁴

300. Unless stated otherwise, Sumitomo Mitsui Banking Corporation, Sumitomo Mitsui Financial Group Inc., Sumitomo Mitsui Banking Corporation Europe Ltd., and SMBC Capital Markets, Inc., and their subsidiaries and affiliates, are referenced collectively in this Complaint as "Sumitomo" or the "Sumitomo Defendants."

301. During the Class Period, the Sumitomo Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

302. Each named Sumitomo Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named Sumitomo Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. While at least one Sumitomo Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States,

¹⁰³ *U.S. Resolution Plan, Public Section*, SMFG, at 4 (Dec. 31, 2014), <https://www.federalreserve.gov/bankinfo/reg/resolution-plans/sumitomo-mitsui-fin-3g-20141231.pdf>.

¹⁰⁴ *Id.*

at least one other Sumitomo Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

303. By way of example only, Defendant Sumitomo Mitsui Banking Corporation issued \$13.4 billion in senior bonds denominated in US Dollars. \$3.25 billion of these bonds were expressly indexed to USD ICE LIBOR rates. Sumitomo Mitsui Financial Group Inc. issued \$28.2 billion in senior bonds denominated in US Dollars. At least \$4.85 billion of these senior bonds were expressly indexed to USD ICE LIBOR. Similarly, Sumitomo Mitsui Financial Group Inc. issued \$750 million in senior bonds paying interest expressly indexed to USD ICE LIBOR plus 1.68%.

304. SMBC Capital Markets offers a “24-hour global derivatives trading platform” that provides access to USD ICE LIBOR Financial Instruments to customers, including individuals and entities in the United States.¹⁰⁵

305. During the Class Period SMBC Capital Markets employed traders in the United States who transacted in USD ICE LIBOR-based derivatives, including Shan Raju, deputy head of trading who “manage[d] an interest rate option portfolio that has generated more than \$15 million in revenue consistently for the past 5 years” and was “[r]esponsible for pricing and hedging of all USD options market-making and customer transactions,” and Mark Bergman an executive director and derivatives trader who was “[r]esponsible for pricing and trading of the Global USD derivative Book. Including IRS, Tenor basis swaps, as well as futures and bonds” in SMBC Capital Markets’ New York City office.

306. Sumitomo Mitsui Banking Corporation Europe Ltd. represented the Sumitomo Defendants as a submitted on the USD ICE LIBOR Panel during the Class Period.

¹⁰⁵ U.S. Resolution at 7-8.

r. UBS Defendants

307. Defendant UBS Group AG is a Swiss aktiengesellschaft with principal places of business at 45 Bahnhofstrasse, Zurich CH-8098, Switzerland and 1 Aeschenvorstadt, Basel CH-4051, Switzerland.

308. Defendant UBS AG is a Swiss aktiengesellschaft with principal places of business at 45 Bahnhofstrasse, Zurich CH-8098, Switzerland and 1 Aeschenvorstadt, Basel CH-4051, Switzerland and it operates a Connecticut Branch at 677 Washington Boulevard, Stamford, Connecticut 06901.

309. Defendant UBS Securities LLC (“UBS Securities”) is a Delaware limited liability company with its principal place of business at 1285 Avenue of the Americas, New York, New York 10019.

310. UBS maintains branches in several U.S. states, including Connecticut, Illinois, Florida, and New York, with its headquarters in New York and Stamford, Connecticut. UBS is registered with the Office of the Comptroller of the Currency (“OCC”), is licensed and supervised by the Board of Governors of the Federal Reserve System, and is registered with the CFTC. UBS Group AG listed both its Connecticut and New York branches as Material Entities in its FDIC Resolution Plan.¹⁰⁶

311. UBS Group AG listed UBS Securities LLC as a Material Entity in its FDIC Resolution Plan.¹⁰⁷

¹⁰⁶ 2018 U.S. Resolution Plan, Public Section, UBS Group AG at 10, <https://www.fdic.gov/regulations/reform/resplans/plans/ubs-165-1807.pdf>.

¹⁰⁷ *Id.*

312. Unless stated otherwise, Defendants, UBS Group AG, UBS AG, and UBS Securities LLC, and their subsidiaries and affiliates, are referenced collectively in this Complaint as “UBS.”

313. During the Class Period, the UBS Defendants shared a unity of corporate interest and operated as part of a single enterprise in furtherance of the conspiracy that purposefully directed conduct causing injury to and derived direct benefit from members of the Class in the United States.

314. Each named UBS Defendant was a co-conspirator and committed overt acts in furtherance of the conspiracy alleged herein in the United States and this District. Each named UBS Defendant engaged in one or more types of suit-related conduct in, or purposefully directed toward, the United States and this District during the Class Period. While at least one UBS Defendant directed USD ICE LIBOR submissions to U.S.-based ICE for calculation, publication, dissemination, and use of USD ICE LIBOR rates in USD ICE LIBOR Financial Instruments issued, sold, or otherwise transacted in by members of the Class in the United States, at least one other UBS Defendant directly issued, sold, or otherwise transacted in such USD ICE LIBOR Financial Instruments with members of the Class in the United States.

315. During the Class Period, UBS Group AG employed traders in New York that transacted in USD ICE LIBOR Financial Instruments, including David Dorman an executive director at UBS Group AG and interest rate derivatives trader based in UBS Group AG’s New York City office.

316. UBS also employed sales teams in the United States to market and sell USD ICE LIBOR Financial Instruments to U.S. investors. For example, David Arias is an OTC derivatives salesman in UBS Group AG’s New York office.

317. By way of example only, March 28, 2011, UBS AG issued \$1 million in notes paying interest expressly indexed to 3-month USD LIBOR plus 1.50% per annum quarterly.¹⁰⁸ UBS AG also issued \$3.5 billion in subordinated notes expressly indexed to USD ICE LIBOR,¹⁰⁹ and \$2.4 billion in senior unsecured debt expressly indexed to USD ICE LIBOR, as of March 31, 2019. For example, on May 22, 2013, UBS AG issued \$1.5 billion in subordinated notes expressly indexed to USD ICE LIBOR.¹¹⁰ On August 14, 2014, UBS AG Stamford issued \$500 million in notes at a floating rate expressly indexed to USD ICE LIBOR.¹¹¹

318. UBS AG represented the UBS Defendants as a submitted on the USD ICE LIBOR Panel during the Class Period.

3. Agents, Affiliates, and Co-conspirators

319. “Defendants,” as used herein, refers to and includes each of the named Defendants’ predecessors, successors, parents, wholly-owned or controlled subsidiaries or affiliates, employees, officers, and directors.

320. Whenever reference is made to any act, deed, or transaction of any corporation or partnership, the allegation means that the corporation or partnership engaged in the act, deed, or transaction by or through its officers, directors, agents, employees, representatives, parent, predecessors or successors-in-interest while they were actually engaged in the management, direction, control, or transaction of business or affairs of the corporation or partnership.

¹⁰⁸ UBS AG, *Pricing Supplement*, SEC, <https://bit.ly/2RH9rEW>.

¹⁰⁹ UBS Group AG, UBS AG, 2018 Annual Report at 23-24 (Form 20-F).

¹¹⁰ UBS Group AG consolidated capital instruments and total loss-absorbing capacity, TLAC-eligible senior unsecured debt, first quarter 2019.

¹¹¹ *Benchmark Bonds Publicly Issued by UBS*, UBS, <https://bit.ly/1SvXsah>.

321. Various other persons, firms, and corporations, that are unknown and not named as Defendants herein, have participated as co-conspirators with Defendants and have performed acts or made statements in furtherance of the conspiracy. Each of the Defendants named herein acted as the agent or joint-venturer of or for the other Defendants with respect to the acts, violations, and common course of conduct alleged herein. Defendants are jointly and severally liable for the acts of their co-conspirators whether named or not named as Defendants in this Complaint.

III. JURISDICTION, VENUE, AND COMMERCE

322. This action arises under Section 1 of the Sherman Antitrust Act, 15 U.S.C. §1, and Sections 4 & 16 of the Clayton Antitrust Act, 15 U.S.C. §§15 & 26.

323. This Court has federal question subject matter jurisdiction under 28 U.S.C. §§1331, 1332(d), and 1337.

324. Venue is proper in this District under 15 U.S.C. §§15(a) & 22, and 28 U.S.C. §1391(b), (c) and (d), because during the Class Period, Defendants resided, transacted business, were found, or had agents in the United States, including in this District, and a substantial portion of the alleged activity affected interstate trade and commerce, including in this District. Each of the Panel Bank Defendants, either directly or through their controlled subsidiaries or affiliates, issued, marketed, sold, or otherwise transacted in USD ICE LIBOR Financial Instruments in the United States, including in this District, with investors, including Plaintiffs and the members of the Class; such conduct furthered Defendants' conspiracy to profit from depressed USD ICE LIBOR rates during the Class Period.

325. Defendants' conspiracy and conduct was within the flow of, was intended to, and did, in fact, have a substantial effect on the interstate commerce of the United States. During the Class Period, Defendants used the instrumentalities of interstate commerce, including interstate wires and wireless spectrum, in furtherance of their illegal scheme.

326. Defendants' conspiracy and conduct alleged herein has been in U.S. import commerce, or has had a direct, substantial, and reasonably foreseeable effect on U.S. domestic commerce, and such effect gives rise to the claims of Plaintiffs and members of the Class, within the meaning of the Foreign Trade Antitrust Improvements Act of 1982, 15 U.S.C. §6a.

327. This Court has personal jurisdiction over each Defendant because each Defendant transacted business, maintained substantial contacts, is located, or they or their co-conspirators committed overt acts in furtherance of their illegal conspiracy, in the United States, including in this District. Specifically, each Defendant purposefully availed themselves of the privilege of doing business in the State of New York and the United States by issuing, marketing, selling, and otherwise transacting in financial instruments expressly indexed to USD ICE LIBOR in the United States, including with Plaintiffs and members of the Class, while secretly depressing USD ICE LIBOR. Defendants' misconduct was purposefully directed at the United States and was specifically intended to affect the prices of, and payments due under, Defendants' transactions with U.S. investors. Defendants' acts were also acts in furtherance of the conspiracy that, because they occurred in the United States by Defendants' domestic entities, provide specific personal jurisdiction over all conspirators.

328. Alternatively, this Court has personal jurisdiction under Fed. R. Civ. P. 4(k)(2) because the claims herein arise under federal law, and the exercise of jurisdiction is consistent with due process, over Defendants, if any, not subject to jurisdiction in any state's courts of general jurisdiction.

329. The conspiracy and overt acts taken in furtherance were directed at, and had the intended effect of, causing injury to persons residing in, located in, or doing business in the United States, including in this District.

330. Numerous overt acts in furtherance of the conspiracy occurred in the United States, including within this District.

331. During the Class Period, at least all named Panel Bank Defendants, both foreign and domestic, engaged in conduct within the United States related to Plaintiffs' allegations. The Panel Bank Defendants transacted in USD ICE LIBOR Financial Instruments with United States residents while conspiring to manipulate ICE LIBOR to garner supracompetitive profits.

332. Plaintiffs allege a profit-motivated conspiracy. As members of the conspiracy, foreign-based Panel Bank Defendants are liable for acts taken in furtherance of the conspiracy by domestic Panel Bank Defendants, as well as their own actions taken in the United States, and personal jurisdiction attaches, regardless of whether some portion of the conduct in furtherance of the conspiracy might have occurred overseas.

333. As detailed above and throughout the Complaint, Panel Bank Defendants purposefully availed themselves of the privilege of doing business in this jurisdiction and should, therefore, have foreseen the possibility of being brought before this Court to answer for any illegal acts related to their business conducted here.

334. The Court has jurisdiction over all Defendants under New York's Long-Arm Statute, N.Y. C.P.L.R. §302, because Defendants are present and transact business in New York State; each Defendant had substantial contacts with New York State; each Defendant committed overt acts in furtherance of Defendants' conspiracy in New York State; each Defendant is an agent of the other Defendants; and Defendants' conspiracy was directed at, and had the intended effect of causing injury to persons residing in, located in, or doing business in New York State.

335. At least the following Defendants are domestic entities that are incorporated in New York or which have their respective headquarters in New York: Citigroup Inc., Citibank, N.A.,

Citigroup Global Markets Inc., JPMorgan Chase & Co., JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC, Barclays Capital Inc., BNP Paribas Securities Corp., Crédit Agricole Securities (USA) Inc., Credit Suisse Securities (USA) LLC, Deutsche Bank Securities Inc., HSBC Bank USA, N.A., HSBC Securities (USA) Inc., ICE Data Services, Inc., ICE Pricing and Reference Data LLC, Lloyds Securities Inc., Merrill Lynch, Pierce, Fenner & Smith Inc., MUFG Securities Americas Inc., RBC Capital Markets, LLC, SG Americas Securities, LLC, SMBC Capital Markets, Inc., and UBS Securities LLC.

336. At least the following Defendants are domestic entities headquartered outside of New York that transact substantial business in New York, including by participating in the USD ICE LIBOR process or transacting in USD ICE LIBOR Financial Instruments: Bank of America Corporation, Bank of America N.A., Intercontinental Exchange, Inc., Intercontinental Exchange Holdings, Inc., and Natwest Markets Securities Inc.

337. At least the following Defendants are foreign entities that transact substantial business in New York, including by participating in the USD ICE LIBOR process or transacting in USD ICE LIBOR Financial Instruments: Barclays plc, Barclays Bank plc, BNP Paribas SA, Crédit Agricole S.A., Crédit Agricole Corporate and Investment Bank, Credit Suisse Group AG, Credit Suisse AG, Deutsche Bank AG, HSBC Holdings plc, HSBC Bank plc, Lloyds Bank plc, MUFG Bank, Ltd. (f/k/a The Bank of Tokyo-Mitsubishi UFJ Ltd.), Mitsubishi UFJ Financial Group, Inc., The Norinchukin Bank, Coöperatieve Rabobank U.A., Royal Bank of Canada, The Royal Bank of Scotland Group plc, NatWest Markets plc (f/k/a The Royal Bank of Scotland plc), National Westminster Bank plc, Société Générale S.A., Sumitomo Mitsui Banking Corporation, Sumitomo Mitsui Financial Group, Inc., UBS Group AG, and UBS AG.

338. The Terms of Use of the ICE website, which contains information about USD ICE LIBOR, and which is incorporated into the Terms and Conditions of the ICE Data Center, which houses USD ICE LIBOR submissions and rate data, provides: “You agree to submit to the exclusive jurisdiction and venue of the state and federal courts located in New York County, New York.”

339. Each Defendant is subject to the jurisdiction of this Court because in furtherance of the conspiracy Defendants, *inter alia*:

- Directed suppressed USD ICE LIBOR submissions from within the United States;
- Calculated USD ICE LIBOR and otherwise administered USD ICE LIBOR from within the United States;
- Published USD ICE LIBOR rates from within the United States;
- Attended ARRC meetings in New York and otherwise used the U.S. ARRC process;
- Transacted directly with U.S. investors in U.S. dollars in USD ICE LIBOR financial instruments;
- Purposefully availed themselves of the forum by selecting New York law and the courts in this District to govern transactions and adjudicate disputes in USD ICE LIBOR financial instruments;
- Purposely availed themselves of the privilege of doing business in this District and the United States by marketing and selling USD ICE LIBOR Financial Instruments to U.S. investors;
- Received and transferred the illicit revenues generated from the conspiracy using interstate wires to and from bank accounts located in the United States and this District;
- Planned and effectuated their conspiracy to fix prices of USD ICE LIBOR and USD ICE LIBOR Financial Instruments over interstate wires;
- Consented to jurisdiction by registering to do business in New York and other States; and

- Conspired with U.S.-based persons and entities, including Defendants ICE, Bank of America, Citibank, and JPMorgan, as well as domestic affiliates of foreign-based Defendants.

340. **Defendants directed suppressed ICE LIBOR submissions from within the United States.** During the Class Period, Defendants' USD ICE LIBOR submissions were determined and submitted by employees on Defendants' U.S.-dollar funding desks that were responsible for raising U.S. dollars to fund each bank's respective operations in the United States. Defendants depressed USD ICE LIBOR submissions, therefore, were determined and submitted to ICE from within the United States, including in this District.

341. **Defendants calculated USD ICE LIBOR and otherwise administered USD ICE LIBOR from within the United States.** The U.S.-based depressed submissions had a direct effect on the calculation of USD ICE LIBOR, which also occurred within the United States. As explained below, the daily ICE LIBOR fixing is calculated in Atlanta, Georgia, and IBA has its data infrastructure located within the United States, including in New York, and is controlled by, and is an alter ego and mere department of U.S.-based ICE. Thus, Defendants manipulated USD ICE LIBOR entirely from within the United States.

342. **Defendants published USD ICE LIBOR rates within the United States.** USD ICE LIBOR rates are published by ICE to U.S. investors through Reuters, Bloomberg, and numerous other outlets in the U.S. and directly by ICE through its internet website and subscription portals in the U.S. ICE itself is located in the U.S. and IBA and its data infrastructure are as well.

343. **Defendants attended ARRC meetings in New York and otherwise used the ARRC process in the United States.** Each meeting of the ARRC was held in New York, New York. Numerous executives of foreign and domestic Defendants attended the meetings in New York, New York, and otherwise participated in the conspiracy through their participation in the ARRC.

344. **Defendants transacted directly with U.S. investors in U.S. dollars in USD ICE LIBOR Financial Instruments in the United States.** As major banks, Defendants fund their operations in the United States by raising U.S. dollars from investors through the sale of financial instruments, such as certificates of deposit, bonds, and floating rate notes, which pay interest expressly indexed to USD ICE LIBOR. Defendants individually and collectively issued billions of dollars of such financial instruments to U.S. investors during the Class Period. These issuances were denominated in U.S. dollars and specifically marketed to U.S. investors, such as Plaintiffs and members of the Class. By conspiring to artificially depress USD ICE LIBOR as alleged herein, Defendants increased their profits by artificially reducing the amount of interest owed to U.S. investors in USD ICE LIBOR Financial Instruments. As a result, U.S. investors that purchased these financial instruments received a lower return on their investment and were placed in a worse position than they would have absent Defendants' conspiracy. Defendants also profited from their persistent depression of USD ICE LIBOR by swapping fixed rate liabilities into floating rate interest rate swaps expressly linked to USD LIBOR with U.S. investors from within the United States.

345. **Defendants purposefully availed themselves of the forum by selecting New York law and the courts in this District to govern their transactions.** As discussed herein, Panel Bank Defendants issued billions of dollars in floating-rate debt expressly indexed to USD ICE LIBOR. Defendants purposefully availed themselves of this forum by typically expressly selecting New York law and the Courts in this District to govern their transactions in floating rate notes expressly indexed to USD ICE LIBOR with U.S. investors. Defendants also entered into master agreements created by the International Swaps and Derivatives Association ("ISDA") with U.S.-based investors that provided for all ICE LIBOR based derivatives transactions to be

governed by New York law and consent to the non-exclusive jurisdiction in the courts of this District. By adopting New York law and using the courts in this District to enforce the terms of their derivatives transactions with Class Members, Defendants purposefully availed themselves of the privilege of conducting business in this State.

346. **Each Defendant purposefully availed itself of the privilege of doing business in the United States by raising funds from and selling ICE LIBOR-based derivatives to U.S. investors.** Defendants Citibank, MUFG, Barclays, BNP Paribas, Credit Agricole, Credit Suisse, Deutsche Bank, HSBC, JPMorgan Chase, RBS, Societe Generale, SMBC, and UBS purposefully availed themselves of the privilege and benefit of raising funds in the United States capital markets from U.S. investors throughout the Class Period. As discussed herein, Defendants need U.S. dollars to fund their operations in the United States, and turned to U.S. investors to raise that money. The United States, including New York, is one of the largest financial centers in the world. Defendants could not raise the U.S. dollars they needed without targeting United States investors. Defendants thus employed hundreds of individuals in the United States in their treasury, capital markets, and funding divisions to help them raise the funds they needed. Each Defendant raised billions of dollars from U.S. investors, including Plaintiff and members of the Class, throughout the Class Period. Defendants also engaged in interest rate swaps in the United States throughout the Class Period.¹¹² Every three years, the Federal Reserve Bank of New York conducts a survey of the over-the-counter interest rate derivatives and foreign exchange market. This survey measures the “turnover,” or volume of transactions, in foreign exchange and interest rate derivatives within the United States.

¹¹² See The Foreign Exchange and Interest Rate Derivatives Markets: Turnover in the United States, THE FEDERAL RESERVE BANK OF NEW YORK (Apr. 2016) at 14, <https://nyfed.org/2X4ZDFM> (last visited June 26, 2019).

347. The Federal Reserve Bank of New York survey only includes data from dealers located within the United States and transactions that are located within the United States. Dealers located outside of the United States report their figures to the central bank where they are located. The Federal Reserve survey measures and reports the turnover of U.S. dollar-based derivatives, which are priced based on USD ICE LIBOR traded by these 13 dealer Defendants in the United States.

348. Defendants Citibank, Bank of Tokyo-Mitsubishi, Barclays, BNP Paribas, Credit Agricole, Credit Suisse, Deutsche Bank, HSBC, JPMorgan Chase, RBS, Societe Generale, SMBC, and UBS each participated in the Federal Reserve Bank of New York's survey of foreign exchange and interest rate derivatives dealers throughout the Class Period, indicating that they entered into interest rate derivatives transactions, including transactions priced, benchmarked, and/or settled based on USD ICE LIBOR, from within the United States.¹¹³

349. Defendants further targeted and sold ICE LIBOR-based debt instruments and derivatives to U.S. investors through the Bloomberg Professional service, commonly referred to as the Bloomberg Terminal. The Bloomberg Terminal is a computer system and subscription service through which users can monitor financial market data and place trades on an electronic trading platform. Bloomberg Professional Services claims 325,000 subscriptions to their Bloomberg Terminal worldwide.¹¹⁴ Many of these Bloomberg Terminals are located in the United States. The Bloomberg Terminal is not publicly available and can only be accessed by subscribers who pay fees to access the services – *i.e.* typically banks, hedge funds, and sophisticated investors

¹¹³ See *id.*

¹¹⁴ Bloomberg, *A global icon*, The Terminal Bloomberg Professional Services, <https://www.bloomberg.com/professional/solution/bloomberg-terminal/> (last visited June 26, 2019) (“Sitting on the desks of **325,000 of the world’s most influential decision makers**, the Bloomberg Terminal is a modern icon of financial markets.”).

like Plaintiffs. Defendants know that subscribers to the Bloomberg Terminal are located in New York and other financial hubs because they transact with counterparties at these locations through the Bloomberg Terminal.

350. By targeting and selling USD ICE LIBOR-based derivatives contracts to U.S. investors and employing treasury and capital markets employees as well as derivatives traders in their New York and Connecticut branches that issued USD ICE LIBOR-based debt instruments and traded ICE LIBOR-based derivatives from within the United States, Defendants purposefully availed themselves of this District.

351. **The profits of Defendants' conspiracy were received and transferred within the United States.** All of the damages at issue in this case occurred within the United States. Monetary gains that Defendants realized from their conspiracy, *e.g.*, as a result of artificially lower interest payments made by Defendants to Plaintiffs and the Class, were transferred by Defendants in the United States from their U.S. bank accounts to the U.S.-based bank accounts of U.S. investors. Similarly, Defendants utilized U.S.-based bank accounts in connection with their over-the-counter ICE LIBOR-based derivatives transactions.

352. **Defendants planned and effectuated their conspiracy to fix prices of USD ICE LIBOR and USD ICE LIBOR Financial Instruments over interstate wires in furtherance of the conspiracy.** Defendants are subject to the jurisdiction of this Court because they used U.S. interstate wires and wireless spectrum to accomplish their depression of USD ICE LIBOR and the prices of USD ICE LIBOR Financial Instruments. Defendants knowingly aimed their false ICE LIBOR submissions to ICE, which is located in the United States, and published the USD ICE LIBOR along with these false submissions and confirmations for collusive transactions intended to impact ICE LIBOR to investors in the United States, using U.S. wires, through Bloomberg and

other financial services platforms. Each business day, ICE transmitted all of the ICE LIBOR contributor panel banks' individual USD ICE LIBOR submissions and the final averaged ICE LIBOR rates to data centers for worldwide publication, including one such data center in Atlanta, Georgia.

353. Defendants' conspiracy to fix USD ICE LIBOR the prices of USD ICE LIBOR Financial Instruments has had direct and substantial effects on commerce in the United States. As discussed, Defendants raised billions of dollars from U.S. investors during the Class Period through bonds, notes and certificates of deposit expressly indexed to USD ICE LIBOR. Defendants themselves selected USD ICE LIBOR as the benchmark interest rate to be used for the interest payments they were obligated to make under the terms of these financial instruments. Defendants did so knowing, as USD ICE LIBOR contributor banks and sophisticated market participants, that USD ICE LIBOR was artificial and being disseminated by Thomson Reuters, Bloomberg, and other financial information services in the United States.

354. Defendants also knew that USD ICE LIBOR was used in the United States to price, benchmark and/or settle USD ICE LIBOR Financial Instruments purchased, sold, or held here because they offered these products and used these rates to price their own positions with investors, such as Plaintiffs and members of the Class.

355. For these reasons, Defendants intended their false USD ICE LIBOR submissions to manipulate and distort USD ICE LIBOR away from its competitive price, causing Plaintiffs and members of the Class to receive lower returns on USD ICE LIBOR Financial Instruments transacted in the United States.

356. **Defendants consented to jurisdiction by registering to do business in New York and other states.** Defendants Barclays, BNP Paribas, Credit Agricole CIB, Credit Suisse,

Deutsche Bank, MUFG Bank, and RBS consented to personal jurisdiction, or otherwise purposely availed themselves of this forum, by registering their New York branches and/or representative or agency offices with the NYSDFS under New York Banking Law §200-b. To benefit from the advantages of transacting business in this forum, these Defendants registered with the NYSDFS, which confers privileges and benefits and binds these entities to the same judicial constraints as domestic corporations. New York Banking Law §200-b provides that by so registering, these Defendants consent to the personal jurisdiction of this Court.

357. MUFG Bank, Barclays, BNP Paribas, Credit Agricole CIB, Credit Suisse, Deutsche Bank, and RBS promoted the legitimacy of their businesses by registering to do business in New York and have therefore consented to jurisdiction within this district or otherwise purposefully availed themselves of the forum.

358. Defendants RBS and UBS consented to personal jurisdiction in the United States by registering with the Connecticut Department of Banking under Section 36a-428g of the Connecticut General Statutes. Other banks are registered to do business in other States.

359. **Defendants conspired with U.S. persons and entities to fix prices of USD ICE LIBOR rates and the prices of USD ICE LIBOR Financial Instruments.** Defendants are subject to personal jurisdiction by virtue of participating in a conspiracy with U.S.-based persons and entities located in the United States, including ICE, Bank of America, Citibank, JPMorgan, and domestic branches and affiliates of foreign banks. These U.S.-based Defendants, along with other Defendants employees in the United States, enacted Defendants' conspiracy in the forum and took overt acts in furtherance of its goal of achieving higher profits by fixing prices of USD ICE LIBOR and USD ICE LIBOR Financial Instruments. As a result, Defendants knowingly

acted in the United States and/or purposefully directed their misconduct at the United States and are subject to the jurisdiction of this Court.

IV. ALLEGATIONS OF FACT SUPPORTING THE CLAIM FOR RELIEF

360. “ICE LIBOR is the primary benchmark for short term interest rates globally.”¹¹⁵ As a financial benchmark interest rate, ICE LIBOR determines the actual interest rate paid or received on financial instruments to which it is indexed. Approximately \$200 trillion in financial instruments are expressly indexed to USD ICE LIBOR.

361. ICE LIBOR is set jointly and published to the investing public by ICE and the Panel Bank Defendants. By definition, ICE LIBOR “provides the average rate at which a LIBOR panel bank could obtain unsecured funding for a given period in a given currency.”¹¹⁶

362. Financial regulators have emphasized in the aftermath of the financial crisis that “[a] benchmark can only be as robust as its underlying market.”¹¹⁷ Being that ICE LIBOR is “the primary benchmark,”¹¹⁸ it is “critical,” as the CFTC puts it, that ICE LIBOR rates and submissions “reflect an honest assessment of the costs of borrowing unsecured funds in the interbank markets.”¹¹⁹

363. During the Class Period, however, ICE LIBOR and ICE LIBOR submissions – specifically, USD ICE LIBOR and USD ICE LIBOR submissions – did not reflect any such honest

¹¹⁵ ICE, *Roundtable Discussion on Evolution of ICE LIBOR, Agenda for Meeting at Swiss National Bank*, at 5 (Sept. 29, 2015), https://www.swisstreasurer.ch/wp-content/uploads/2015/06/LIBOR-Round-Table-Meeting-Agenda-29092015_SNB_final.pdf.

¹¹⁶ ICE, ICE LIBOR IOSCO Assessment Report, at 1 (Aug. 2017), <https://bit.ly/2Y8C3tm>.

¹¹⁷ FSB, *Reforming Major Interest Rate Benchmarks*, *supra*, at 13.

¹¹⁸ ICE, *Roundtable Discussion on Evolution of ICE LIBOR*, *supra*, at 5.

¹¹⁹ Quintenz’s Opening Statement, *supra*.

assessment, resulting in damages to investors such as Plaintiffs and members of the Class in financial instruments expressly indexed to USD ICE LIBOR.

A. USD ICE LIBOR Rates Were Jointly Set and Disseminated in the United States for Incorporation into Domestic Transactions with U.S. Residents During the Class Period by the Concerted Action of Defendants

1. The Panel of Banks and the Administrator that Depressed USD ICE LIBOR Submissions and Rates

364. “ICE LIBOR rates are the end-product of a calculation based upon submissions from LIBOR contributor banks.”¹²⁰ There is a panel of banks for each of the five ICE LIBOR currencies: US Dollars (“USD”), Pounds Sterling (“GBP”), Euros (“EUR”), Japanese Yen (“JPY”), and Swiss Franc (“CHF”).¹²¹

365. As reflected in the following excerpt from a 2015 presentation by ICE to Swiss regulators,¹²² there is considerable overlap between the memberships of the USD panel and other panels:

¹²⁰ ICE, Roundtable Discussion on Evolution of ICE LIBOR, *supra*, at 5.

¹²¹ ICE LIBOR IOSCO Assessment Report, *supra*, at 15.

¹²² ICE, Roundtable Discussion on Evolution of ICE LIBOR, *supra*, at 5.

Bank	USD	GBP	EUR	CHF	JPY
Bank of America	o				
Bank of Tokyo-Mitsubishi	o	o	o	o	o
Barclays Bank	o	o	o	o	o
BNP Paribas	o	o			
Citibank	o	o	o	o	
Credit Agricole	o	o			o
Credit Suisse	o		o	o	
Deutsche Bank	o	o	o	o	o
HSBC	o	o	o	o	o
JP Morgan	o	o	o	o	o
Lloyds Bank	o	o	o	o	o
Mizuho Bank		o	o		o
Rabobank	o	o	o		
Royal Bank of Canada	o	o	o		
Santander		o	o		
Societe Generale	o	o	o	o	o
Sumitomo Mitsui Bank	o				o
The Norinchukin Bank	o				o
Royal Bank of Scotland	o	o	o	o	o
UBS	o	o	o	o	o

366. Defendants Bank of America, Citigroup, JPMorgan, Barclays, MUFG, Credit Agricole, Credit Suisse, Deutsche Bank, HSBC, Lloyds, Norinchukin, Rabobank, RBC, RBS, Sumitomo, and UBS each had one of their corporate entities represent them as submitters on the USD panel during the entire Class Period. Defendants BNP Paribas and Societe Generale no longer sit on the USD panel, though they remain on other ICE LIBOR panels. BNP Paribas left the USD panel in late 2016 and Societe Generale left the USD Panel in late 2017.

367. ICE has published a policy indicating the “criteria” for ICE LIBOR panel membership.¹²³ Purportedly, the “objective of the policy is to have a panel of participants that are active in the unsecured interbank deposit and other related markets.”¹²⁴

¹²³ ICE, Policy Composition of ICE LIBOR Currency Panels, *supra* (cited in ICE LIBOR IOSCO Assessment Report, *supra*).

¹²⁴ *Id.*

2. The Submission Question and Responses that Facilitated Depressed ICE LIBOR Submissions and Rates

368. Each business day, the Panel Bank Defendants submit rates to ICE in response to the ICE LIBOR “Submission Question,” which asks the individual Panel Bank Defendants to answer the following question each business day:

At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11am?¹²⁵

369. The “definition appears to narrowly prescribe 11 a.m. interbank deposits as the basis for submissions,”¹²⁶ and “links the figures submitted by Contributor Banks to their own market activity, rather than a hypothetical entity.”¹²⁷

370. Each ICE LIBOR currency has seven tenors: “Overnight/Spot Next; 1 Week; 1 Month; 2 Months; 3 Months; 6 Months and 12 Months.”¹²⁸ The Panel Bank Defendants are supposed to “send IBA the rate at which they believe they could borrow funds in a currency for each of the seven tenors.”¹²⁹ Thus, USD ICE LIBOR, by definition, ostensibly “measures how expensive it is for a large bank to borrow U.S. dollars in the unsecured interbank market at different maturities.”¹³⁰

¹²⁵ ICE, Code of Conduct, Issue 2, *supra*.

¹²⁶ IOSCO, *Review of the Implementation of IOSCO’s Principles for Financial Benchmarks by Administrators of Euribor, Libor and Tibor*, at 87 (July 2014), http://www.fsb.org/wp-content/uploads/r_140722a.pdf.

¹²⁷ *Id.* at 86.

¹²⁸ ICE LIBOR Benchmark Statement, *supra*, at 1.

¹²⁹ ICE LIBOR IOSCO Assessment Report, *supra*, at 15.

¹³⁰ William C. Dudley, President and Chief Executive Officer, *Restoring Confidence in Reference Rates*, FEDERAL RESERVE BANK OF NEW YORK (Oct. 2, 2014), <https://nyfed.org/2KCh4vH>.

3. The Depressed USD ICE LIBOR Rates Resulted from Depressed ICE LIBOR Submissions

371. The Panel Bank Defendants submit their daily responses to ICE between 11:05 a.m. and 11:39:59 a.m. London time.¹³¹ ICE purports to calculate each ICE LIBOR rate of the five currencies and seven tenors using a “trimmed arithmetic mean.”¹³² On any given day, the 16 members of the current USD ICE LIBOR panel each submit to ICE their 3-month rates. ICE then discards the top four and bottom four submissions, and calculates the average of the remaining eight submissions to arrive at the ICE LIBOR rate.

4. The Depressed USD ICE LIBOR Rates Are Published in the United States for Incorporation into Financial Instruments Transacted in the United States

372. ICE publishes USD ICE LIBOR to the market at approximately 11:55 a.m. London time each business day. The current daily USD ICE LIBOR rates are carried in all major business publications, such as *The Wall Street Journal* and *Financial Times*, as well as on financial information services, such as Reuters and Bloomberg, where ICE LIBOR has its own dedicated and widely referenced “screens.”

373. Financial instruments expressly indexed to USD ICE LIBOR often define USD ICE LIBOR by reference to “Reuters Screen LIBOR01,” in accord with definitions published by the International Swaps and Derivatives Association (“ISDA”), which is a leading standard setting association in the financial services industry, over which the Panel Bank Defendants exercise substantial influence and control. The 2006 ISDA Definitions provide:

‘USD-LIBOR-BBA’ means that the rate for a Reset Date will be the rate for deposits in U.S. Dollars for a period of the Designated Maturity which appears on

¹³¹ ICE Code of Conduct, Issue 5, *supra*, ¶4.7.

¹³² ICE, Roundtable Discussion on Evolution of ICE LIBOR, *supra*, at 5.

the Reuters Screen LIBOR01 Page as of 11:00 a.m., London time, on the day that is two London Banking Days preceding that Reset Date.

374. As reflected in the example screenshots below, Reuters Screen LIBOR01 provides the ICE LIBOR rates and states the ICE LIBOR definition:

10:55 18JUL18 THOMSON REUTERS ICE LIBOR* RATES UK67516 LIBOR01
 ICE BENCHMARK ADMINISTRATION INTEREST SETTLEMENT RATES Alternative to <3750>
 [18/07/18] RATES AT 11:00 LONDON TIME 18/07/2018 Disclaimer <LIBORDISC>
 *FORMERLY KNOWN AS BBA LIBOR LIBOR Guide <LIBORMENU>

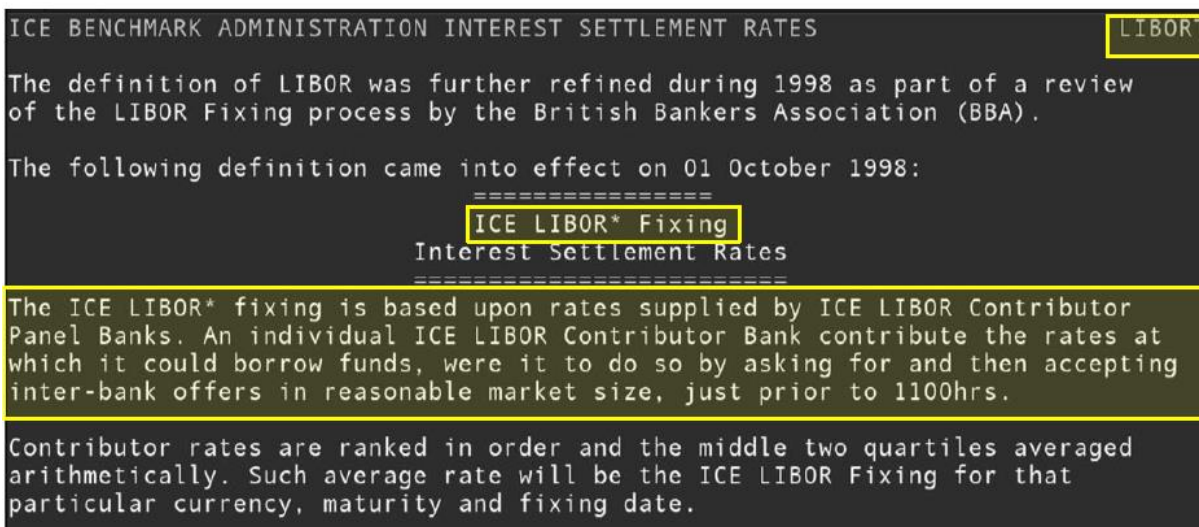
	USD	GBP	CAD	EUR	JPY	EUR 365
0/N	1.91325	0.45563		-0.44514	SN-0.05983	
1WK	1.95213	0.47638		-0.43300	-0.06633	
2WK						
1MO	2.08625	0.58613		-0.39600	-0.06950	
2MO	2.17900	0.64888		-0.37029	-0.04800	
3MO	2.34750	0.75306		-0.35771	-0.03950	
4MO						
5MO						
6MO	2.52663	0.85163		-0.31857	0.01650	
7MO						
8MO						
9MO						
10MO						
11MO						
12MO	2.80088	1.01125		-0.23500	0.12333	

BBA NZD, DKK, SEK, AUD, CAD, EURSD & EUR365 discontinued. Please see <BBALEGACY>.
 <0#LIBORSUPERRICS> RICs for above <0#LIBORRICs> Contributor RICs

375. In the upper, right-hand portion of Reuters Screen LIBOR01, there is a reference to the “LIBOR Guide” at “LIBORMENU,” which expressly references and links to Reuters Screen “LIBORT” for the ICE LIBOR “Definition.” The Reuters Screen “definition” of ICE LIBOR tracks the Submission Question posed to the Panel Bank Defendants, including in part:

ICE LIBOR* Fixing**Interest Settlement Rates**

The ICE LIBOR* fixing is based upon rates supplied by ICE LIBOR Contributor Panel Banks. An individual ICE LIBOR Contributor Bank contribute [sic] the **rates at which it could borrow funds**, were it to do so by asking for and then accepting inter-bank offers in reasonable market size, just prior to 1100hrs.



376. Similarly, the 2006 ISDA Definitions provide:

“USD-LIBOR-BBA-Bloomberg” means that the rate for a Reset Date will be the rate for deposits in U.S. Dollars for a period of the Designated Maturity which appears on the Bloomberg Screen BTMM Page under the heading “LIBOR FIX BBAM<GO>” as of 11:00 a.m., London time, on the day that is two London Banking Days preceding that Reset Date.”

377. The corresponding Bloomberg screens are similar to their Reuters counterparts, providing the ICE LIBOR and the ICE LIBOR Submission Question:

ICE Benchmark Administration Limited (IBA)

ICE LIBOR Rates are based on rates quoted by ICE Contributor Banks. Every contributor bank is asked to base their ICE LIBOR submissions on the following question: “At what rate could you borrow funds, were you to do so by asking for

and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”

ICE Benchmark Administration Limited (IBA)

ICE LIBOR Rates are based on rates quoted by ICE Contributor Banks. Every contributor bank is asked to base their ICE LIBOR submissions on the following question: “At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”

B. LIBOR before ICE

378. Before ICE LIBOR, there was BBA LIBOR. BBA LIBOR was administered by the British Bankers Association (“BBA”), a trade association controlled by major banks. The BBA started setting LIBOR with panels of banks in the 1980s, but it was ousted from its role prior to the Class Period in the wake of a previous scandal involving collusive LIBOR rigging largely during the 2007-2009 period, around the 2008 financial crisis. That scandal involved a number of BBA LIBOR currencies as well as other “IBOR” benchmarks.

379. Numerous banks settled allegations of wrongdoing relating to BBA LIBOR and other financial benchmarks, including by paying substantial criminal and civil fines and penalties to government enforcers, as well as significant civil settlements. Traders submitting to the BBA were alleged to have collusively manipulated BBA LIBOR on numerous occasions to benefit particular trading positions, and also to have understated submissions to the BBA to overstate their creditworthiness when many of the banks were in severe financial distress during and around the 2008 financial crisis.

380. The BBA LIBOR governmental investigations came to light in 2011, when “investigations regarding submissions to the British Bankers’ Association, which set[] LIBOR rates” were first publicly disclosed.¹³³ In June 2012, the first of many banks agreed to pay hundreds of millions in fines and civil penalties to the DOJ and CFTC to resolve claims that

¹³³ UBS Annual Report, at 318 (Mar. 15, 2011), <https://bit.ly/2X0wBqP>.

“between 2005 and 2007, and then occasionally thereafter through 2009,” certain of its traders requested “LIBOR and EURIBOR submitters contribute rates that would benefit the financial positions held by those traders.”¹³⁴ Many others, including a number of current Panel Bank Defendants, would pay substantial fines, penalties, and settlements covering that time period for benchmark manipulation, including for manipulating EURIBOR, TIBOR, USD LIBOR, Sterling LIBOR, Swiss Franc LIBOR, and Yen LIBOR. (Further detail on Panel Bank Defendants’ documented misconduct in prior LIBOR, IBOR, and other benchmark rigging cases is set forth in Part IV.F.2.f., *infra*).

381. Government investigations and regulatory efforts also were aimed toward improving financial benchmarks, including BBA LIBOR, in order to guard against future harm to investors. The first of these efforts was the Wheatley Review, which was commissioned by the U.K. government shortly after the initial settlements in 2012. The Wheatley Review produced a report on the BBA LIBOR scandal, known as the Wheatley Report, which was published in September 2012.¹³⁵

382. The Wheatley Report made numerous recommendations aimed at improving the process for setting BBA LIBOR. The reform efforts recommended by Wheatley (as well as by other regulatory groups, such as the International Organization of Securities Commissions (“IOSCO”) and the Financial Stability Board (“FSB”)) were directed at removing conflicts of interest, improving oversight and governance, and moving to ground panelists’ benchmark submissions in verifiable underlying transactions.

¹³⁴ Department of Justice (DOJ), *Barclays Bank PLC Admits Misconduct Related to Submissions for the London Interbank Offered Rate and the Euro Interbank Offered Rate and Agrees to Pay \$160 Million Penalty* (June 27, 2012), <https://www.justice.gov/opa/pr/barclays-bank-plc-admits-misconduct-related-submissions-london-interbank-offered-rate-and>.

¹³⁵ Wheatley Report, *supra*.

383. The results of the government investigations and reform efforts would ultimately reveal that USD ICE LIBOR was baseless during the Class Period and requires replacement with another benchmark entirely.

C. LIBOR Comes to America

384. Chief among the reforms that had been recommended by Wheatley in 2012 in the wake of the original LIBOR scandal was removing the BBA from the LIBOR setting process and “finding a new home for Libor.”¹³⁶ In July 2013, *The Wall Street Journal* reported that LIBOR would be moving “from British to American hands,”¹³⁷ observing:

Libor, the scandal-tarred benchmark owned by a British banking organization, is being sold to NYSE Euronext, the U.S. company that runs the New York Stock Exchange. . . . The deal means that the City of London will lose one of the institutions most closely associated with its rise as a global financial hub in recent decades. The new owner will be the institution that is most closely associated with Wall Street.¹³⁸

385. During early 2013, proposals were solicited and received from new candidates to administer a new LIBOR with the promise of restoring the “integrity” of the benchmark. This months-long selection process resulted in the ouster of the BBA in favor of NYSE Euronext, Inc. (“NYSE”), after “[a]n independent committee, set up by the UK government, selected the New York-based group over two UK-based rivals.”¹³⁹

386. On July 9, 2013, the committee announced that the BBA had accepted the committee’s recommendation that NYSE should be the new administrator, and reports surfaced

¹³⁶ David Enrich, Jacob Bunge & Cassell Bryan-Low, *NYSE Euronext to Take Over LIBOR*, THE WALL STREET JOURNAL (July 9, 2013), <https://on.wsj.com/2XbAVsA>.

¹³⁷ Phillipa Leighton-Jones, *Sold for 1£. NYSE Euronext Takes Over LIBOR*, THE WALL STREET JOURNAL (July 9, 2013), <https://on.wsj.com/2ZKg0tg>.

¹³⁸ NYSE Euronext to Take Over LIBOR, *supra*.

¹³⁹ Brooke Masters & Philip Stafford, *Scandal-Plagued LIBOR Moves to NYSE*, FINANCIAL TIMES (July 9, 2013), <https://on.ft.com/2N7duM3>.

that NYSE purchased LIBOR for £1. Baroness Sarah Hogg, who led the committee, said that handing LIBOR to NYSE “will play a vital role in restoring the international credibility of LIBOR.”¹⁴⁰ The fact that “the administration of a distinctly British institution is being handed over to an American company” was noteworthy to industry watchers.¹⁴¹

387. In announcing its selection, NYSE maintained that it was “uniquely placed to restore the international credibility of LIBOR,” and committed to “restoring credibility, trust and integrity in LIBOR as a key global benchmark.”¹⁴²

388. At the time of its selection in July 2013, the NYSE was in the process of being taken over by Atlanta-based ICE, which would trumpet its newly-acquired role in a “Strategic & Financial Update” to shareholders in late 2013, emphasizing that LIBOR is among the “most ubiquitous benchmarks,” the trillions in outstanding notional value linked to LIBOR, and ICE’s own “[t]rack record of leveraging intellectual property to create value.”¹⁴³

389. Some objected to NYSE/ICE taking over the LIBOR setting process. An RBC analyst admitted: *“[t]he fact they are handing this to a derivatives exchange is a surprise. . . It just doesn’t seem independent enough.”*¹⁴⁴

390. CFTC Commissioner, Bart Chilton observed:

¹⁴⁰ Hogg Tendering Advisory Committee Press Release, *The Hogg Tendering Advisory Committee announces that NYSE Euronext is to be the new LIBOR administrator* (July 9, 2013), available at, <https://bit.ly/2J7PjrA>.

¹⁴¹ Nathaniel Popper, *NYSE EuroNext to Take Over Administration of Libor*, DEALBOOK (July 9, 2013), available at, <https://nyti.ms/2LhygWW>; accord NYSE Euronext to Take Over LIBOR, *supra* (noting that LIBOR is being sold to a United States company that runs the New York Stock Exchange).

¹⁴² NYSE Euronext, *NYSE Euronext Subsidiary to Become New Administrator of LIBOR* (July 9, 2013), http://static.tijd.be/upload/LIBOR_4205987-64897.pdf.

¹⁴³ ICE, *ICE Strategic & Financial Update*, at 11 (Nov. 19, 2013), <https://bit.ly/2Yc4LJP>.

¹⁴⁴ Matt Levine, *NYSE Wants To Be Responsible For Libor For Some Reason*, DEALBREAKER (July 9, 2013), <https://dealbreaker.com/2013/07/nyse-wants-to-be-responsible-for-libor-for-some-reason/>.

We had a ‘*fox guarding the henhouse*’ issue here, and we should learn from that. . . . I firmly believe that having a truly neutral third party administrator would be the best alternative, and *I’m not sure that an exchange is the proper choice*.¹⁴⁵

391. Mr. Chilton would further state as to NYSE/ICE taking over: “Whenever there’s a profit motive involved in setting [these benchmarks], I get suspicious.”¹⁴⁶

392. These concerns would prove prescient.

393. After being named the new administrator in July 2013, but prior to officially taking over as administrator in early 2014, NYSE/ICE attended meetings of an Interim LIBOR Oversight Committee (“ILOC”) established by the BBA on which sat a number of the Panel Bank Defendants. During the months between its formal appointment and actually taking over as an administrator, NYSE/ICE had the opportunity to learn the true nature of the lack of interbank funding underlying LIBOR.

394. The ILOC was aware from its earliest meetings that there was insufficient interbank market activity underlying LIBOR. Despite its knowledge obtained from the BBA, as well as the panel banks and others on the ILOC, ICE filed for U.S. trademarks, which branded the “new and improved” ICE LIBOR®,¹⁴⁷ and officially took over as the administrator as of midnight February 1, 2014.¹⁴⁸ ICE LIBOR has been calculated in Atlanta during the Class Period. Indeed, IBA’s entire data infrastructure was migrated to and resides in ICE U.S. data centers in Atlanta, California, Chicago, and New York.

¹⁴⁵ *Id.*

¹⁴⁶ NYSE Euronext to Take Over LIBOR, *supra*.

¹⁴⁷ U.S. Trademark Reg. No. 4956352 (filed Feb. 4, 2014).

¹⁴⁸ ICE, *ICE Benchmark Administration to Become New Administrator of LIBOR on February 1, 2014* (Jan. 17, 2014), <https://ir.theice.com/press/press-releases/all-categories/2014/01-17-2014>.

395. Upon taking over, ICE adopted a “Code of Conduct” prepared in 2013 as its own, calling it “Issue 2,” on February 3, 2018.¹⁴⁹ In addition to the Code of Conduct not having changed, neither the banks on the USD ICE LIBOR panel, nor the Submission Question changed. Two banks would drop off the USD panel in late 2016 and late 2017, but otherwise the USD panel would remain the same during the Class Period.

396. Despite having the information within its control from the beginning, ICE never disclosed the full extent of the lack of interbank funding, particularly the lack of interbank funding underlying USD ICE LIBOR. Like the Panel Bank Defendants, but unlike the general public, ICE knew, at least as of the time it officially took over, that there would not be enough interbank lending transactions to support USD ICE LIBOR.

D. The Demise of the Interbank Funding Market Underlying USD ICE LIBOR Submissions and USD ICE LIBOR Rates

397. Notwithstanding the numerous reforms called for in the wake of the original LIBOR scandal, ICE continued for years to calculate LIBOR based on the Panel Bank Defendants’ responses to the same “Submission Question,” as did the BBA, which asks each business day:

*“At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11am?”*¹⁵⁰

398. However, there is not an active “interbank” funding market in which the panel banks “could” “borrow funds,” much less in any “reasonable market size” each morning on a daily

¹⁴⁹ ICE, *LIBOR Code of Conduct*, Issue 2 (Feb. 3, 2014) <https://bit.ly/2J56QAN> (last visited June 26, 2019).

¹⁵⁰ ICE Code of Conduct, Issue 2, ¶3.1, *supra*. Compare *BBA Libor, The Basics*, <https://bit.ly/2RzQHqV>.

basis. In the words of Chairman Powell and Chairman Giancarlo: “*In essence, banks are contributing a daily judgment about something they no longer do.*”¹⁵¹

399. Although LIBOR ostensibly “indicates the interest rate that banks pay when they borrow on an unsecured basis,”¹⁵² regulators have revealed that the market for interbank unsecured borrowing, which is the market underlying LIBOR, has all but ended. “Indeed, while the use of financial products referencing LIBOR has steadily grown, the actual volume of unsecured borrowing transactions underlying LIBOR has been in decline.”¹⁵³

400. ICE LIBOR has lacked an active underlying market since at least 2014 when ICE took over from the BBA. While implementing conduct and governance-related LIBOR reforms in the wake of the original LIBOR scandal, regulators came to learn that there were not enough transactions in the interbank lending market to support the ICE LIBOR benchmark. As a result, regulatory and industry efforts have shifted from repairing LIBOR to replacing it.

401. While there was once a robust underlying interbank funding market on which ICE LIBOR rates and submissions could be based, interbank funding was on the decline by the time of the financial crisis, and market changes after the crisis exacerbated its demise. As Defendant RBC has admitted, “much of this decline can be attributed to changes in the regulatory framework that have made it far less attractive for banks to lend to other banks through short-term unsecured markets.”¹⁵⁴

¹⁵¹ Chairman Powell speech, *supra*. See also ISDA, IBOR Global Transition Roadmap 2018, *supra*.

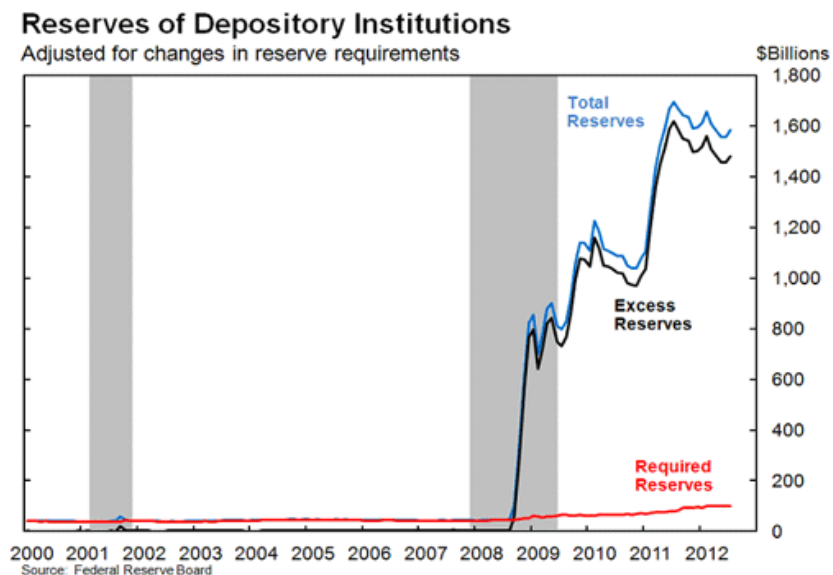
¹⁵² ICE, Code of Conduct, Issue 5, *supra*, ¶1.2.

¹⁵³ Federal Reserve Bank of New York, *Second Report of the Alternative Reference Rates Committee*, at 27 (ARRC) (Mar. 2018) <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2018/ARRC-Second-report>.

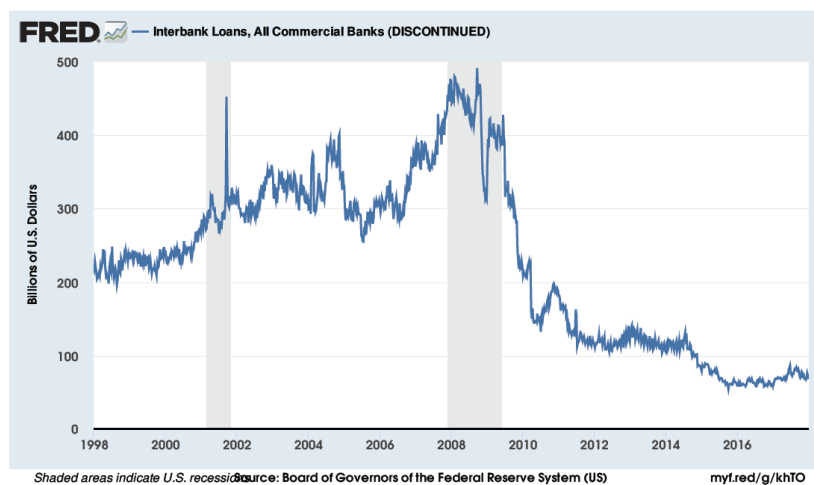
¹⁵⁴ RBC Capital Markets, *Preparing for transition: Update on LIBOR and a possible shift to alternative reference rates* (Mar. 2018), <https://bit.ly/2LfTi8o>.

402. The demise of the interbank lending market is a story that was a direct result of the Fed's efforts to stabilize the banking industry during the financial crisis. Prior to 2008, the Federal Reserve would pay interest only on the level of reserves required to be held on deposit with the Fed. No interest was paid on balances above the reserve requirement. Banks would manage their balance at the Fed to minimize their excess reserves in favor of investing, including by loaning into the interbank market, to generate a return. The interbank market was one of the primary outlets to which banks, with excess reserves, would turn by loaning funds to other banks on an unsecured, short-term basis. During the financial crisis in 2008, the Federal Reserve changed its longstanding rule and began paying interest on all reserves, including on excess reserves, at a rate set by the Federal Reserve ("IOER"). As a result, banks have ready access to risk-free, short-term interest on their excess reserves through the Fed. They have been increasingly unwilling to put their capital at risk in the form of loaning funds on an unsecured, short-term basis.

403. During the years since the Federal Reserve began paying interest on excess reserves and other post-crisis reforms were mandated, large banks, like the Panel Bank Defendants, have been holding cash in reserve rather than extending unsecured interbank loans, as reflected in the following chart:



404. Following the financial crisis, and as a result of changed market conditions, the once robust interbank funding market dried up almost entirely, as illustrated in the following chart derived from data collected by the Federal Reserve:



405. As the head of the Federal Reserve Bank of New York, William C. Dudley, recently observed:

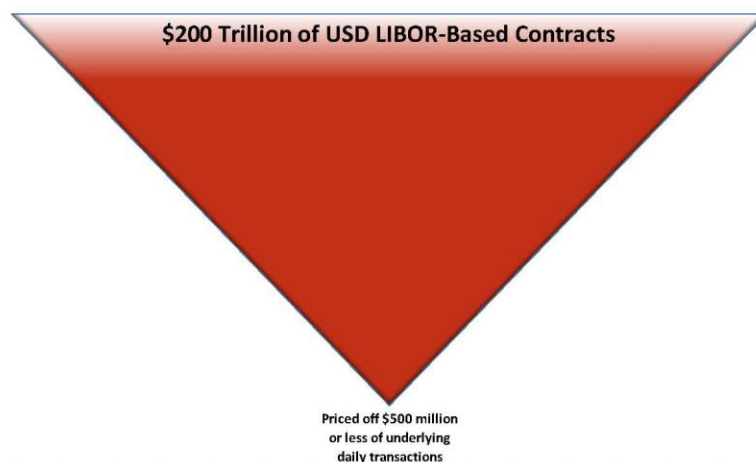
The essential problem with LIBOR is the inherent fragility of its “inverted pyramid,” where the pricing of hundreds of trillions of dollars of financial instruments rests on the expert judgment of relatively few individuals, informed by a very small base of unsecured interbank transactions. Moreover, that base has contracted further in recent years, due to many factors, including regulatory reform

and the quantitative easing programs initiated by central banks in many of the major advanced economies. Relative to the vast sums of U.S.-dollar LIBOR contracts I mentioned earlier, the median daily volume of unsecured three-month U.S.-dollar wholesale borrowing is minuscule, at around \$1 billion, and many days see less than \$500 million in volume. This lack of market liquidity means that these rates cannot be sufficiently transaction-based to be truly representative, and rates that are not transaction-based are more at risk to be manipulated.

* * * *

So, despite efforts to improve LIBOR in recent years – and there undoubtedly have been important changes that have strengthened its administration and governance – the lack of underlying market liquidity for nearly all currencies and maturities remains a problem, and there is no obvious solution. The setting of LIBOR still depends heavily on expert judgment. Even for U.S.-dollar LIBOR, actual transactions are the basis for only about one-third of the rate submissions for tenors of one and three months. This is noteworthy because these are the maturities that are referenced by the bulk of financial contracts.¹⁵⁵

406. A recent presentation from the CFTC illustrates this “inverted pyramid”:¹⁵⁶



4

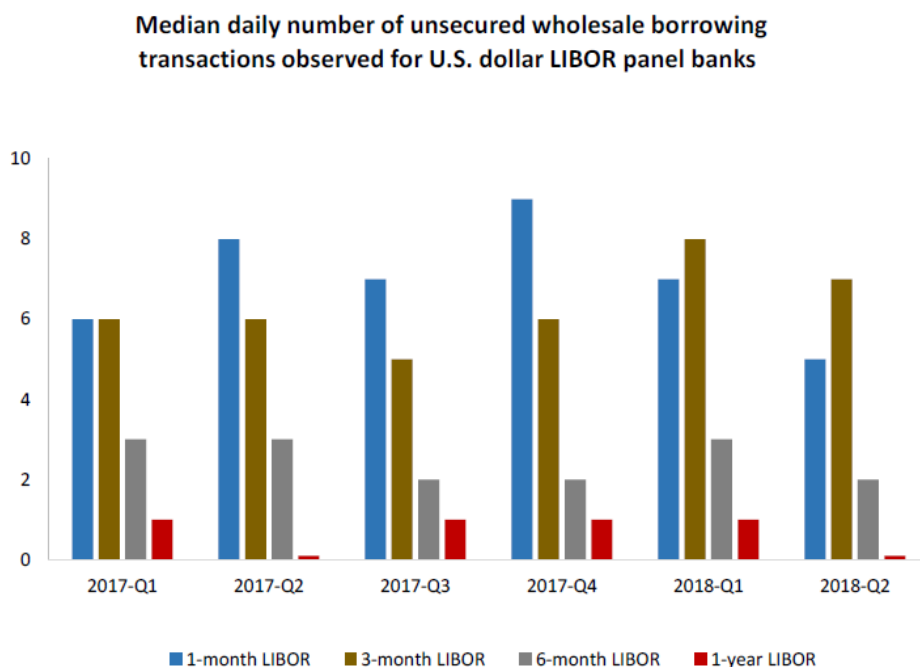
407. More recently, the Federal Reserve specifically disclosed as to USD ICE LIBOR in a July 19, 2018, presentation:

¹⁵⁵ Dudley May 24, 2018 speech, *supra*.

¹⁵⁶ See CFTC, *Panel 1: Overview of LIBOR Reform, CFTC Market Risk Advisory Committee (MRAC) Meeting* (July 12, 2018), <https://bit.ly/2J3OmRj>.

On average, we observe six or seven transactions per day at market rates that could underpin one- and three-month **LIBOR across all of the panel banks**. The longer maturities have even fewer transactions. There are two to three transactions each day for six-month LIBOR. On average, there is only one transaction that we see underlying one-year LIBOR, and *many days there are no transactions at all*.¹⁵⁷

408. This actually *overstates* the volume of *interbank* transactions. The notes to this data presented by the Federal Reserve reveal that even this small handful of “transactions” are not limited to interbank funding transactions. Rather, the transactions consist of: “fed funds, Eurodollar, certificates of deposit and unsecured commercial paper transactions,” as reflected in the presentation slide from the Federal Reserve reproduced below:



Note: Chart key describes bars in order from left to right for each quarter. Transactions are aggregated across all available fed funds, Eurodollar, certificates of deposit, and unsecured commercial paper transactions of the 16 banks currently submitting to U.S. dollar LIBOR. Transactions above \$10 million with tenors between 25 and 35 days (for one month), 80 and 100 calendar days (three month), 150 to 210 calendar days (six month), or 330 and 390 days (one year) are included for each maturity, excluding any transactions more than 25 basis points above or below the day's LIBOR rate (excluding days on which the FOMC altered its monetary policy targets).

¹⁵⁷

Quarles, Introductory Remarks, *supra*.

409. This shows that it is simply not true that the Panel Bank Defendants “could” “borrow funds” in U.S. dollars in the interbank market in any “reasonable market size,” much less “just prior to 11am” each and every morning during the Class Period.

410. Never once has any Panel Bank denied these and other regulators’ public pronouncements that USD ICE LIBOR is based on a virtually non-existent market. Their collective silence in the face of this should be taken as admissions by each of them.

411. Moreover, a number of Defendants have expressly admitted this. To illustrate:

JPMorgan admitted in 2019:

Following the first major settlements concerning banks’ LIBOR submissions in 2012, regulators and policymakers undertook a review of financial benchmarks that ultimately led to increased oversight and governance. During this process they recognized that the decline in wholesale unsecured term money market funding by banks threatened the steadfastness of LIBOR: \$190 trillion worth of derivatives and \$8 trillion worth of loans and mortgages reference a benchmark derived from just \$500 million in average in daily trading volumes.¹⁵⁸

Credit Suisse admitted in 2018:

The wealth of transactions underpinning SOFR stands in contrast to LIBOR, one of the critical issues of which is the scarcity of actual transactions across the term structure and consequent need for banks to employ expert judgment and pricing from other markets when putting forward their LIBOR submissions.¹⁵⁹

RBC admitted in 2018:

There has been significant decline in the interbank unsecured funding markets in the last decade. Much of this decline can be attributed to changes in the regulatory framework that have made it far less attractive for banks to lend to other banks through short-term unsecured markets. . . . To illustrate the above point, in the US, for three-month funding (the most heavily referenced LIBOR tenor), the median transaction volume is less

¹⁵⁸ J.P.Morgan, *Leaving LIBOR: A Landmark Transition* (Jan. 2019), <https://bit.ly/2XwT9nn>.

¹⁵⁹ Credit Suisse Group AG, *Interest Rates Focus: Not SOFR away – A Transition Guide* (May 4, 2018).

than USD \$1 billion per day. These transactions underpin more than USD \$100 trillion in outstanding volumes of USD LIBOR contracts.¹⁶⁰

Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JPMorgan each admitted through the ARRC in 2018:

LIBOR is increasingly based on the expert judgment of panel banks due to the declining amount of unsecured, wholesale borrowings by banks since the financial crisis. For this reason, LIBOR is increasingly less of a robust, transactions-based market interest rate¹⁶¹

UBS admitted in 2018:

Since the global financial crisis, banks have reduced their interbank borrowing, so trading volumes and liquidity have become severely limited. As a result, only about USD 500 million of three month interbank loans are trading on any given day. Since these trades serve to provide the informational quotes used to create the LIBOR curve, this illiquidity has increasingly become an issue. As shown in Fig. 3, some USD 200 trillion worth of LIBOR-based contracts are reliant on a very small, illiquid, and shrinking base rate.¹⁶²

412. UBS even provided the following illustration, which mirrors that which has been presented by government regulators, indicating its shared view of a “fundamental problem” with USD ICE LIBOR:¹⁶³

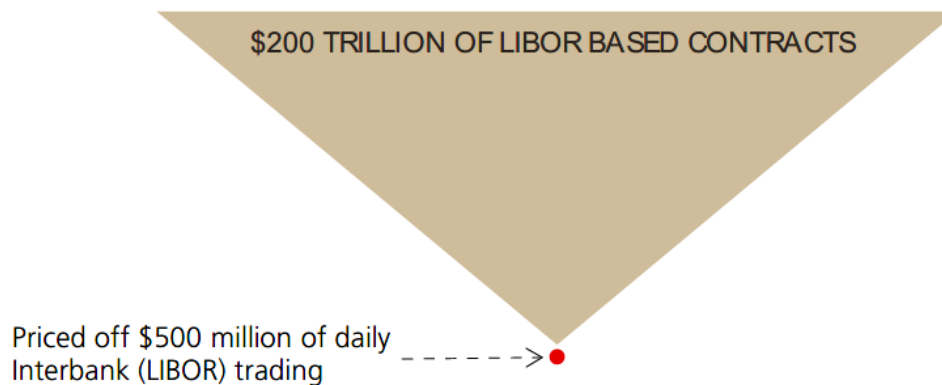
¹⁶⁰ RBC Capital Markets, *Preparing for transition: Update on LIBOR and a possible shift to alternative reference rates* (March 2018).

¹⁶¹ ARRC, FAQ (Sept. 20, 2018), <https://nyfed.org/2FwS3Ot>.

¹⁶² UBS AG, *LIBOR-SOFR: Be Aware and Prepare* (Aug. 16, 2018).

¹⁶³ *Id.* at 2.

Fig. 3: The fundamental problem with Libor



Source: LSTA, UBS, as of 8 August 2018

413. As co-conspirators, these express admissions should be attributed to all Defendants.

E. USD ICE LIBOR Submissions and USD ICE LIBOR Rates Were Depressed During the Class Period

414. During the Class Period, one thing is certain: USD ICE LIBOR submissions and USD ICE LIBOR rates – despite the Submission Question – were *not representative* of the rates at which the Panel Bank Defendants “could” borrow unsecured interbank funds. Multiple statistical analyses show that Defendants systematically submitted and set rates below where they would have been but for their violations of law during the Class Period.

415. USD ICE LIBOR submissions and rates were consistently lower than the Panel Bank Defendants’ individual and collective expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

1. USD ICE LIBOR Submissions and Rates Did Not Reflect Where the Panel Bank Defendants Truly Expected They “Could” Borrow in the Interbank Market by Numerous Objective Measures

416. USD ICE LIBOR submissions and rates were consistently lower than what they should have been, as demonstrated by a number of objective measures. Although USD ICE

LIBOR was understood by investors to be “the interest rate high-credit quality banks charge one another for short-term financing,”¹⁶⁴ the submissions and published rates did not include the credit, term, and liquidity premiums called for by the USD ICE LIBOR definition and thus did not reflect, and were substantially lower than, the Panel Bank Defendants’ true expected costs of borrowing.

417. That is, USD ICE LIBOR submissions and rates were always (or nearly always) below the level at which the panel banks “could” have expected to obtain funding, even assuming they “could” borrow on the interbank market.

418. As defined, USD ICE LIBOR “incorporates a bank credit risk premium because it is an unsecured interbank funding rate,”¹⁶⁵ as distinguished from secured or government lending. USD ICE LIBOR submissions, therefore, should “reflect not only a risk-free component, but also counterparty credit risk related to the specific borrower.”¹⁶⁶ As the FSB Report explains:

Market interest rates can be decomposed into a risk-free rate and several risk premia, including a term premium, a liquidity premium, and a credit risk premium as well as potentially a premium for obtaining term funding. Reference rates such as the IBORs that are based on unsecured interbank markets reflect a premium for the credit risk of their contributing banks as well as potential term, liquidity, and funding premia. However, rates based on secured borrowing markets or for unsecured borrowing by sovereigns with little default risk would not contain this type of credit risk premium.¹⁶⁷

419. However, USD ICE LIBOR submissions and rates have not reflected the credit costs of the banks during the Class Period. Individual USD ICE LIBOR submissions have been lower than what they would have been had they reflected the creditworthiness of the individual

¹⁶⁴ PIMCO, *supra*.

¹⁶⁵ BlackRock, *Libor the Next Chapter*, at 6 (July 27, 2017), <https://bit.ly/2X2tBdx>.

¹⁶⁶ Dudley Oct. 2, 2014 speech, *supra*. (“As is clear from the hypothetical question, LIBOR is meant to capture a bank’s cost of unsecured borrowing. This means that the reference rate will reflect not only a risk-free component, but also counterparty credit risk-related to the specific borrower.”).

¹⁶⁷ FSB, *Reforming Major Interest Rate Benchmarks*, *supra*, at 10.

submitters. As a result, USD ICE LIBOR rates have been set lower than where they should have been set.

420. Comparisons of USD ICE LIBOR submissions and rates against (a) the rate available for Interest on Excess Reserves; (b) the rates at which the Panel Banks' actual debt traded contemporaneously; (c) General Collateral rates; and (d) the Panel Bank Defendants' contemporaneous CDS spreads show that the Panel Bank Defendants' USD ICE LIBOR submissions and USD ICE LIBOR rates during the Class Period were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

a. Interest on Excess Reserves

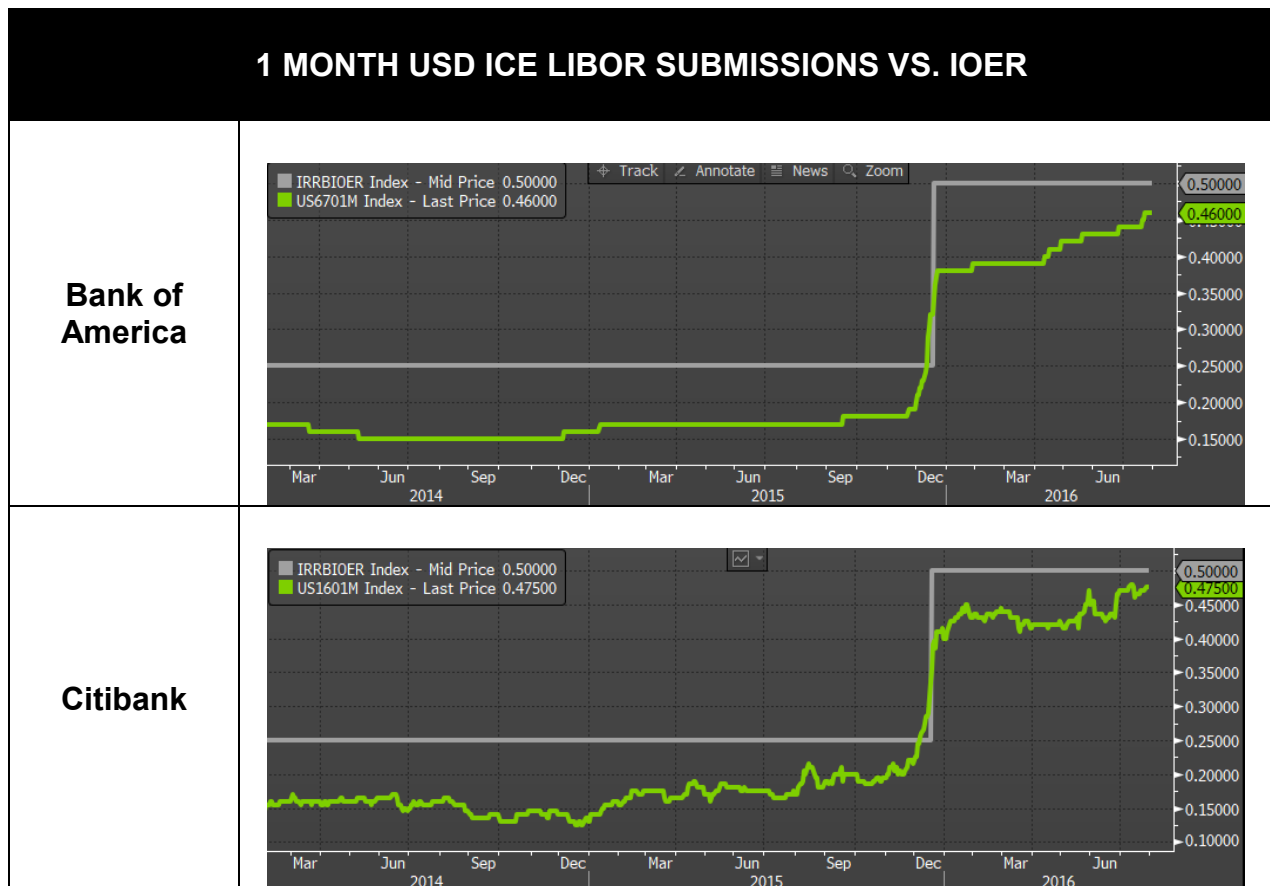
421. As discussed above, interbank lending plummeted while levels of excess reserves deposited with the Federal Reserve soared in the wake of the financial crisis. Large U.S. and foreign banks, such as the Panel Bank Defendants, increasingly have been holding excess reserves as an alternative to interbank unsecured lending in recent years. However, during the Class Period, the overnight and 1-month USD ICE LIBOR rates have, nearly always, been lower than the interest-rate the Federal Reserve pays on such excess reserves.

422. IOER should be a floor. In a functioning market that efficiently prices risk, the rate at which the Panel Bank Defendants could expect to borrow on an unsecured interbank basis should always, or nearly always, be higher than IOER because reserves deposited with the Fed do not carry the risk premium associated with the unsecured interbank loans on which USD ICE LIBOR submissions and rates are supposed to be based.

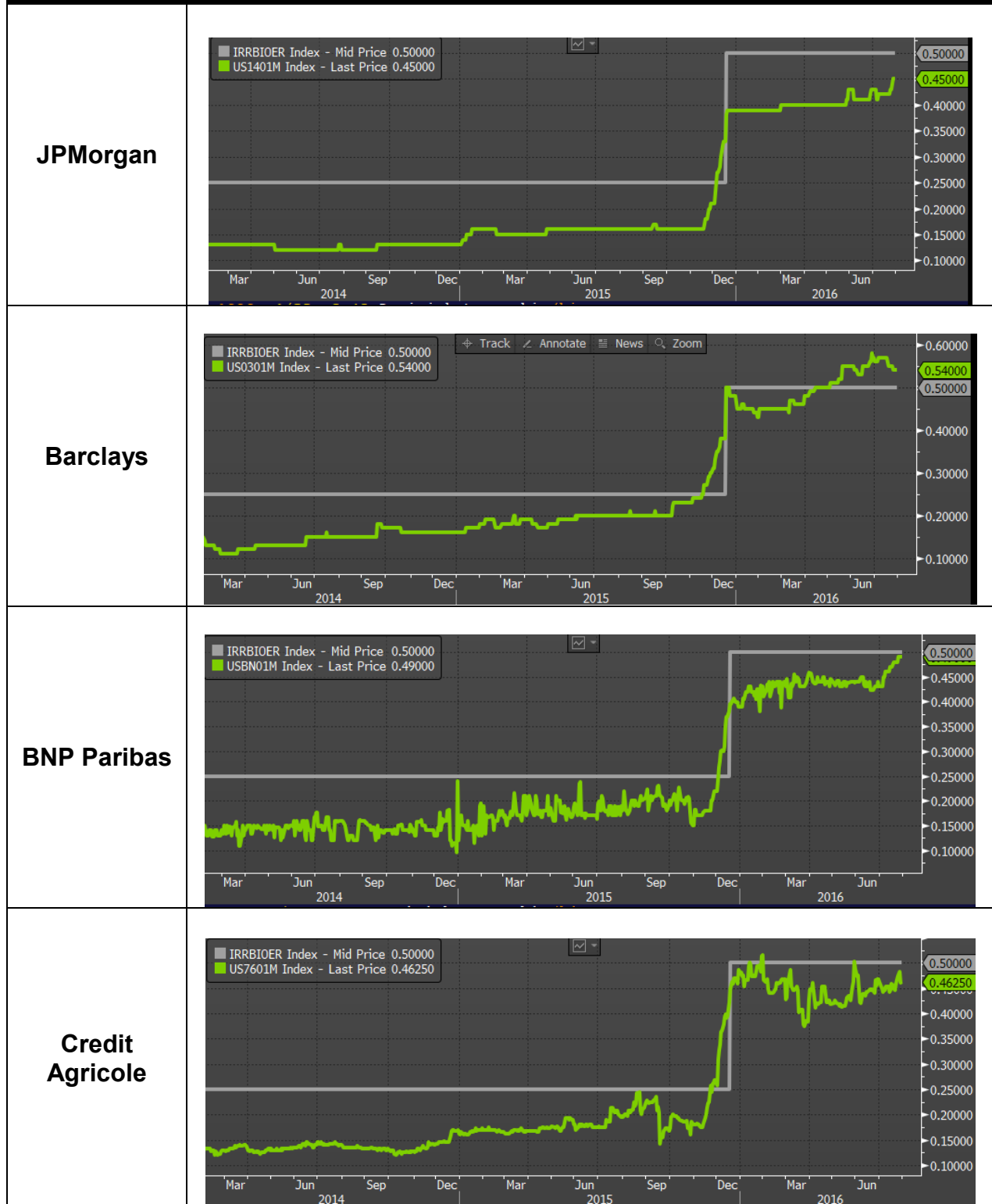
423. As an unsecured rate, USD ICE LIBOR contains a credit component. A Panel Bank Defendant, in submitting the rate at which it "could" borrow, even if estimating, rather than referencing actual interbank transactions (due to the lack of interbank transactions), would (if

answering truthfully) respond with a rate higher than IOER by an amount that would capture, among other things, its own perceived counterparty risk for the appropriate tenor. In addition to a credit spread, submissions (in tenors other than the overnight), should incorporate an appropriate spread to account for term and liquidity risk. As a result, overnight and short-term USD ICE LIBOR should always be higher than IOER.

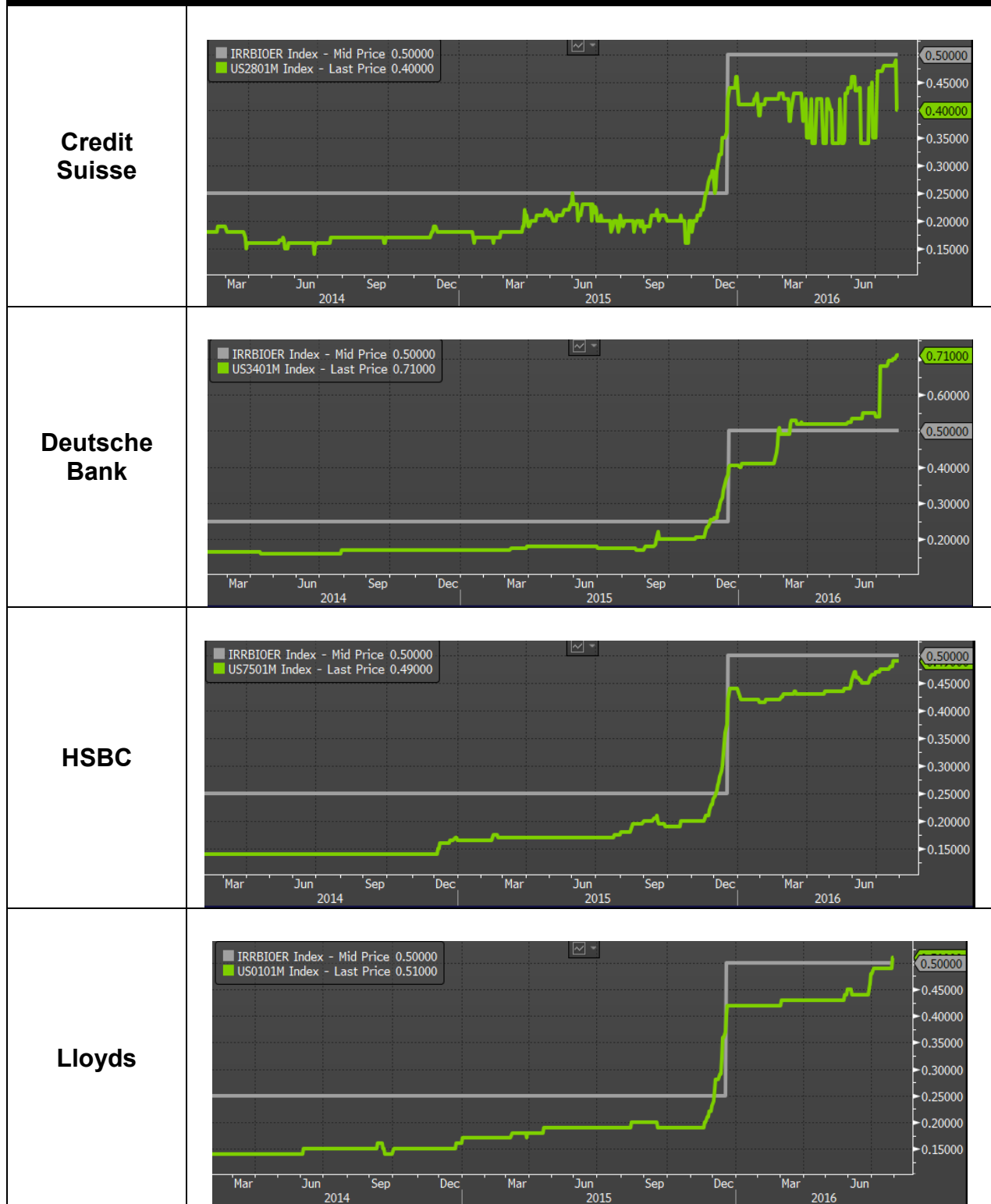
424. The Panel Bank Defendants' individual submissions, however, were well below where they should have been in relation to IOER during the Class Period. The following charts show that all of the Panel Bank Defendants submitted 1-month LIBOR significantly below IOER nearly every day from February 1, 2014 (when ICE took over as administrator) through July 29, 2016 (the last date on which the Panel Bank Defendants' submissions are publicly available):



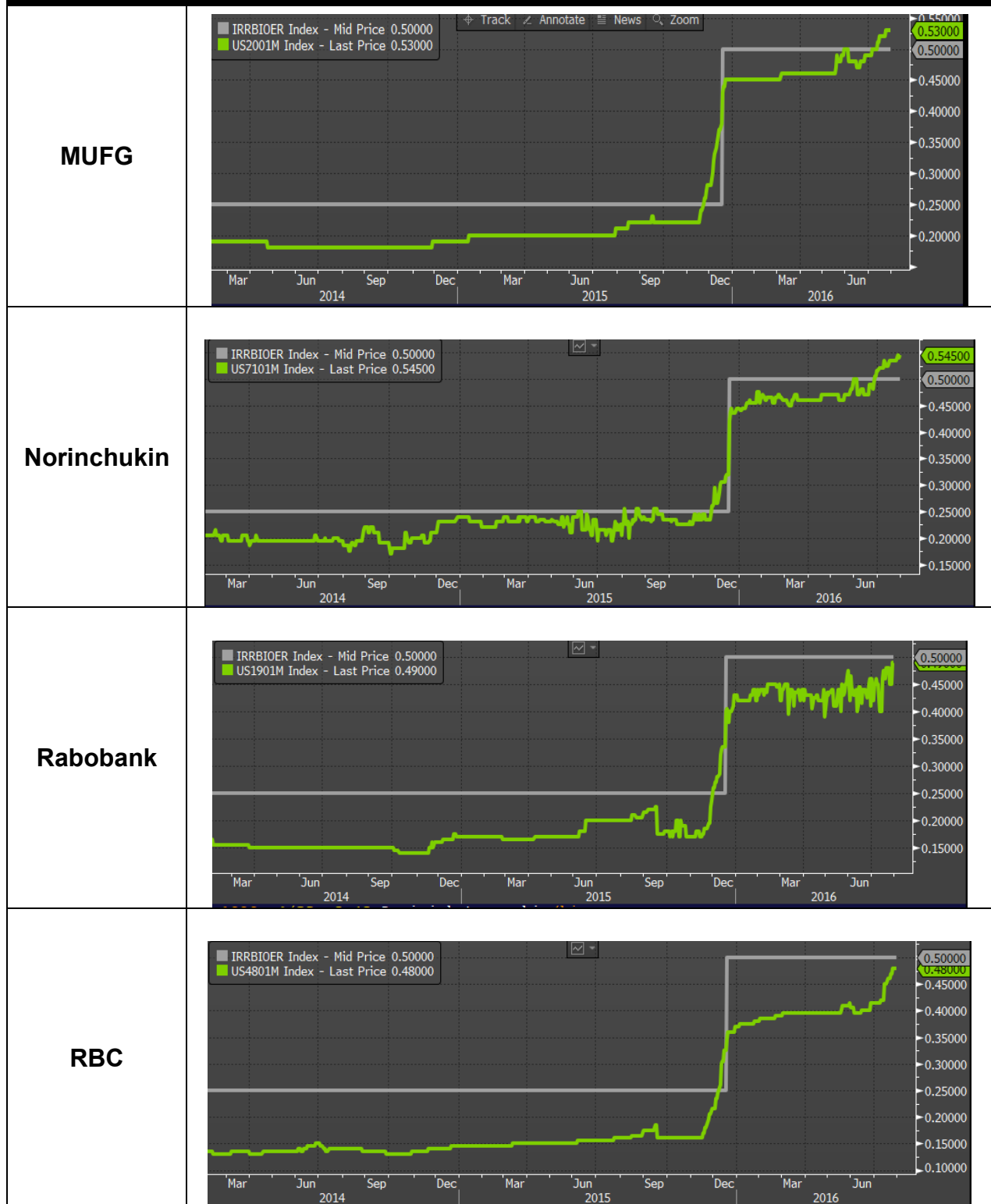
1 MONTH USD ICE LIBOR SUBMISSIONS VS. IOER



1 MONTH USD ICE LIBOR SUBMISSIONS VS. IOER



1 MONTH USD ICE LIBOR SUBMISSIONS VS. IOER



1 MONTH USD ICE LIBOR SUBMISSIONS VS. IOER

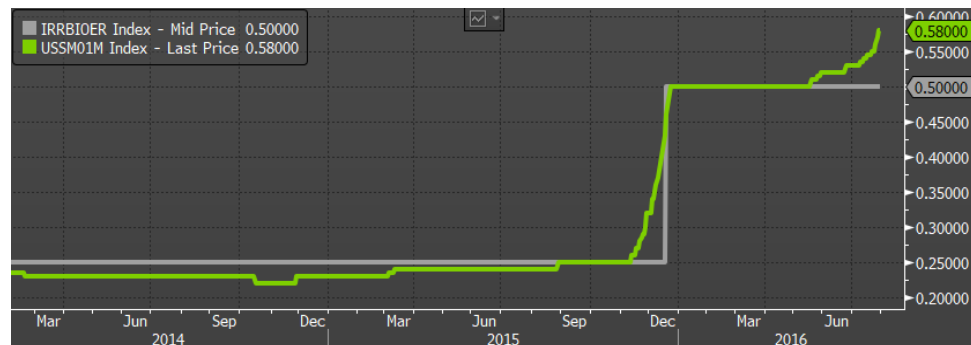
RBS



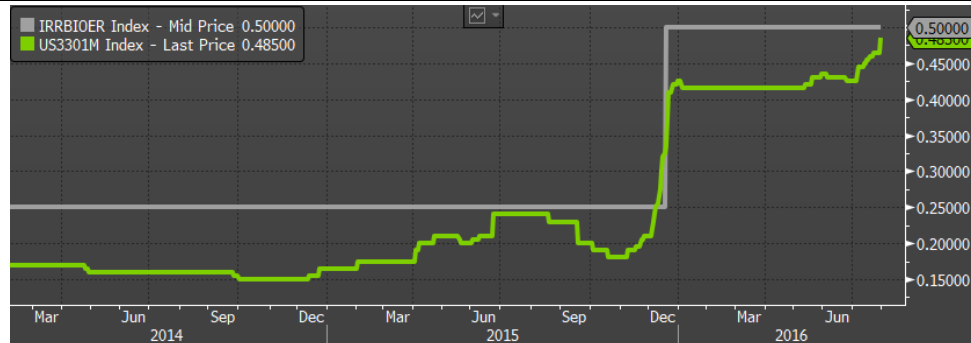
Societe Generale



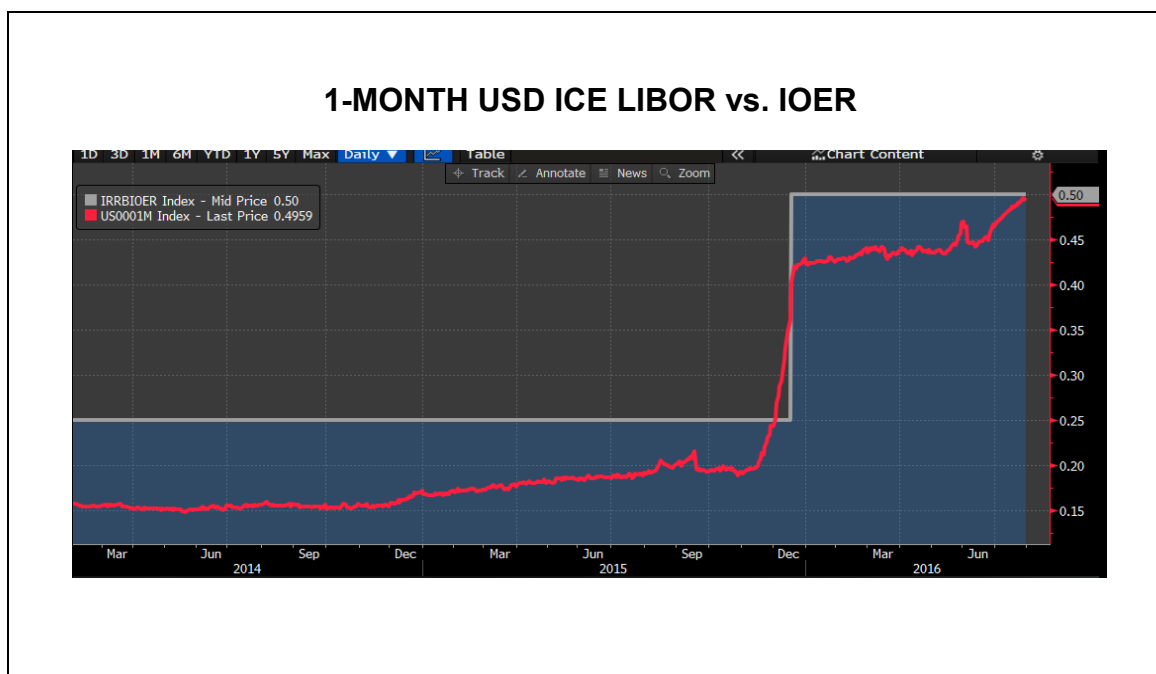
Sumitomo



UBS



425. The following chart compares Overnight and 1-month USD ICE LIBOR to IOER from the same period and shows that rather than being above IOER, 1-month USD ICE LIBOR was actually nearly always below IOER:



426. This analysis shows that Panel Bank Defendants' submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

b. Contemporaneous Debt

427. A comparison of the Panel Bank Defendants' respective publicly-available historic USD ICE LIBOR submissions and USD ICE LIBOR rates with contemporaneous yields on the Panel Bank Defendants' respective outstanding corporate bonds of similar maturity also shows that the Panel Bank Defendants' 1-month and 3-month USD ICE LIBOR submissions and rates were consistently suppressed during the Class Period.

428. Although the yield on a banking organization's debt issuances (i) should be equivalent to its corresponding USD ICE LIBOR submission, and (ii) surely would have been

well-known by those on the USD funding desks responsible for submitting USD ICE LIBOR in real time, the submissions and rates were consistently significantly lower than the corresponding contemporaneously traded debt.

429. The results of the analysis were striking: for the 1-month tenor, the analysis showed Panel Bank Defendants' submissions were *depressed 99.24% of the time by an average 41 basis points*. For the 3-month tenor, the analysis showed Panel Bank Defendants' submissions were *depressed 93.47% of the time by an average 30 basis points*.



430. As a general matter, the yield on a banking organization's debt issuances should be equivalent to its USD ICE LIBOR submission for a given maturity at a given time, as such yields indicate where a firm should expect that it "could borrow." To illustrate, a five-year note issued four years and nine months ago (*i.e.*, reaching maturity in three months) should have a yield equivalent to a 3-month obligation issued today.

431. Contemporaneous yields were determined by reviewing historical bond trading data of the Panel Bank Defendants' publicly traded debt issuances outstanding during the Class Period at certain periods of time prior to the maturity of those issuances. The yield at which a

given firm's 3-month USD-denominated debt traded at a particular time, for purposes of comparing to, for instance, its 3-month USD ICE LIBOR submissions, was determined by comparing where the firm's outstanding debt on representative issuances traded one year prior to maturity of such debt, as reflected in the Trade Reporting and Compliance Engine ("TRACE") of the Financial Regulatory Authority ("FINRA"). Likewise, trades three months prior to maturity show where 3-month debt was trading.

432. To test where USD ICE LIBOR submissions and rates stood in comparison to the Panel Bank Defendants' contemporaneous unsecured debt trading, Panel Bank Defendants' senior fixed-rate debt activity from February 1, 2014 to December 31, 2018, which were to mature in 30 or 90 days, as available on TRACE, were reviewed: a total of 8,898 trades totaling approximately \$8 billion in volume were considered.

433. Review was limited to secondary market trades of senior unsecured debt obligations with an original issue amount of \$500mm or greater. This ensured enough market liquidity to avoid idiosyncratic results that could skew the analysis, as smaller issues are not always indicative of current market levels. Trades within a window three days before and after the submissions were used for robustness. For example, if a bank's 3-month submission was March 15, 2015, 3-month trades from March 12 to March 18 were assessed. All trades were included in the analysis using a weighted average.

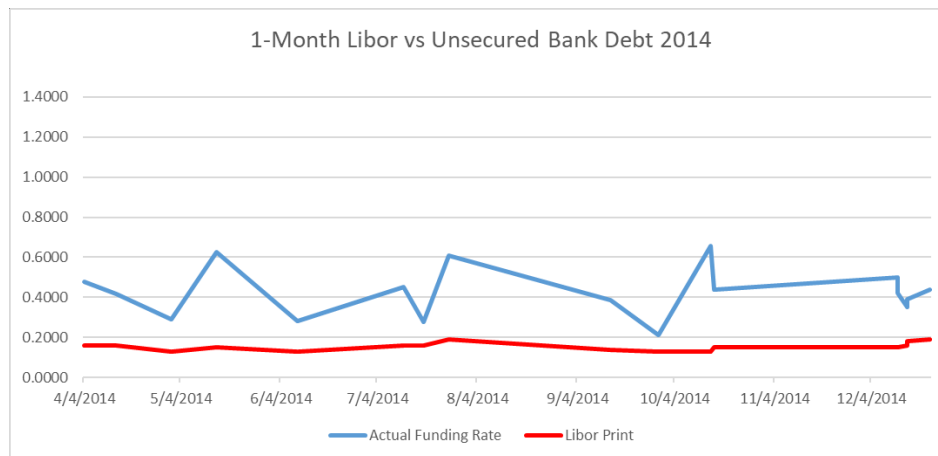
434. The results were compared to each individual Panel Bank Defendants' corresponding USD ICE LIBOR submissions from February 1, 2014 through July 31, 2016 (after which historical ICE LIBOR submissions are no longer publicly available). Beginning August 1, 2016, with no submission data publicly available, the results were compared to the corresponding USD ICE LIBOR rate.

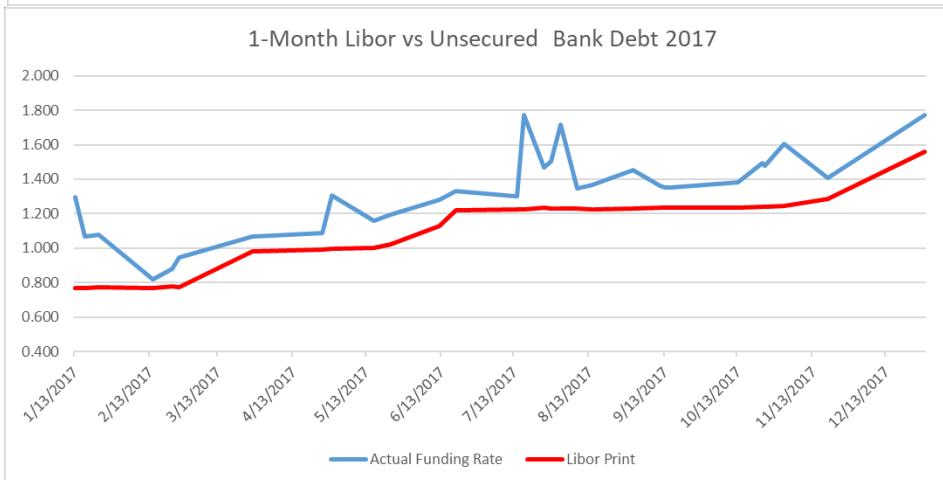
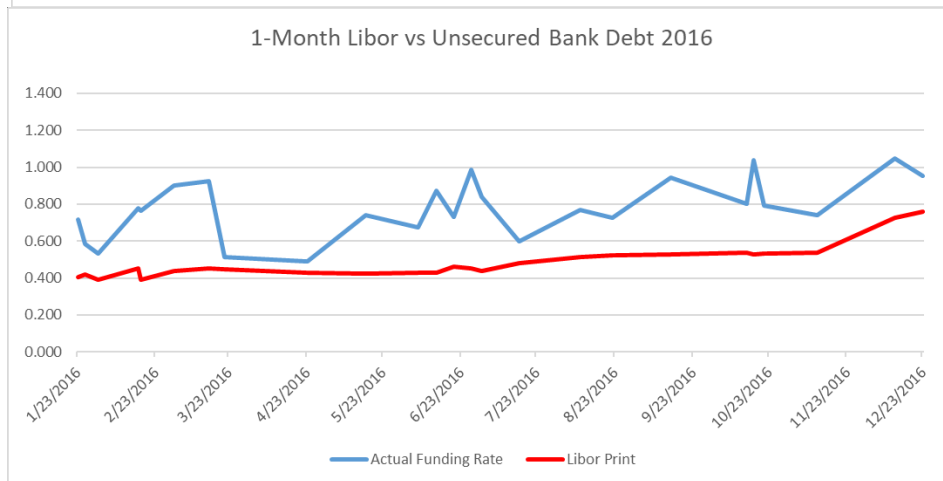
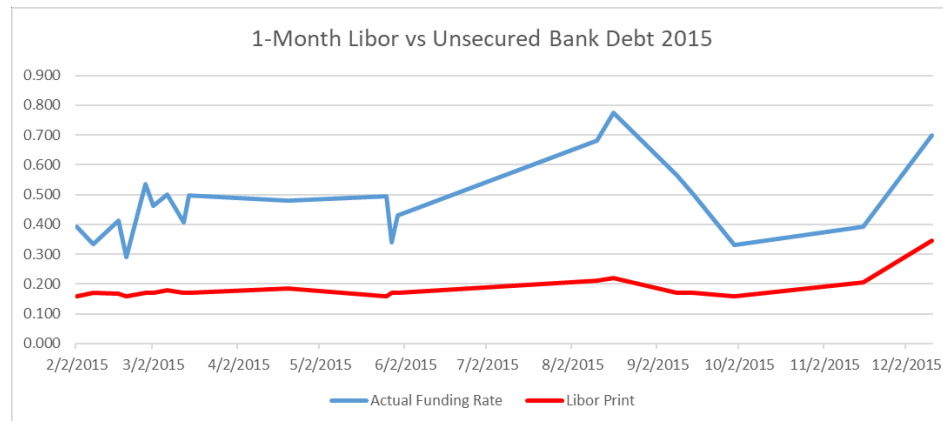
435. In all, 3,717 1-month trades and 5,181 3-month trades were considered. Trades varied in size: almost 31% of the sampling consisted of trades greater than \$200,000, 21% greater than \$500,000, 15% greater than \$1mm, and approximately 10% greater than \$2mm. The average trade size was \$927,000 in the 1-month tenor and \$865,000 in the 3-month tenor.

436. Because the Panel Bank Defendants are supposed to submit the rate at which they believe they expecting “could” actually borrow USD from similar institutions, one would expect that the rates at which the Panel Bank Defendants submitted would match the contemporaneous trades in the Panel Bank Defendants’ USD debt of the same time to maturity.

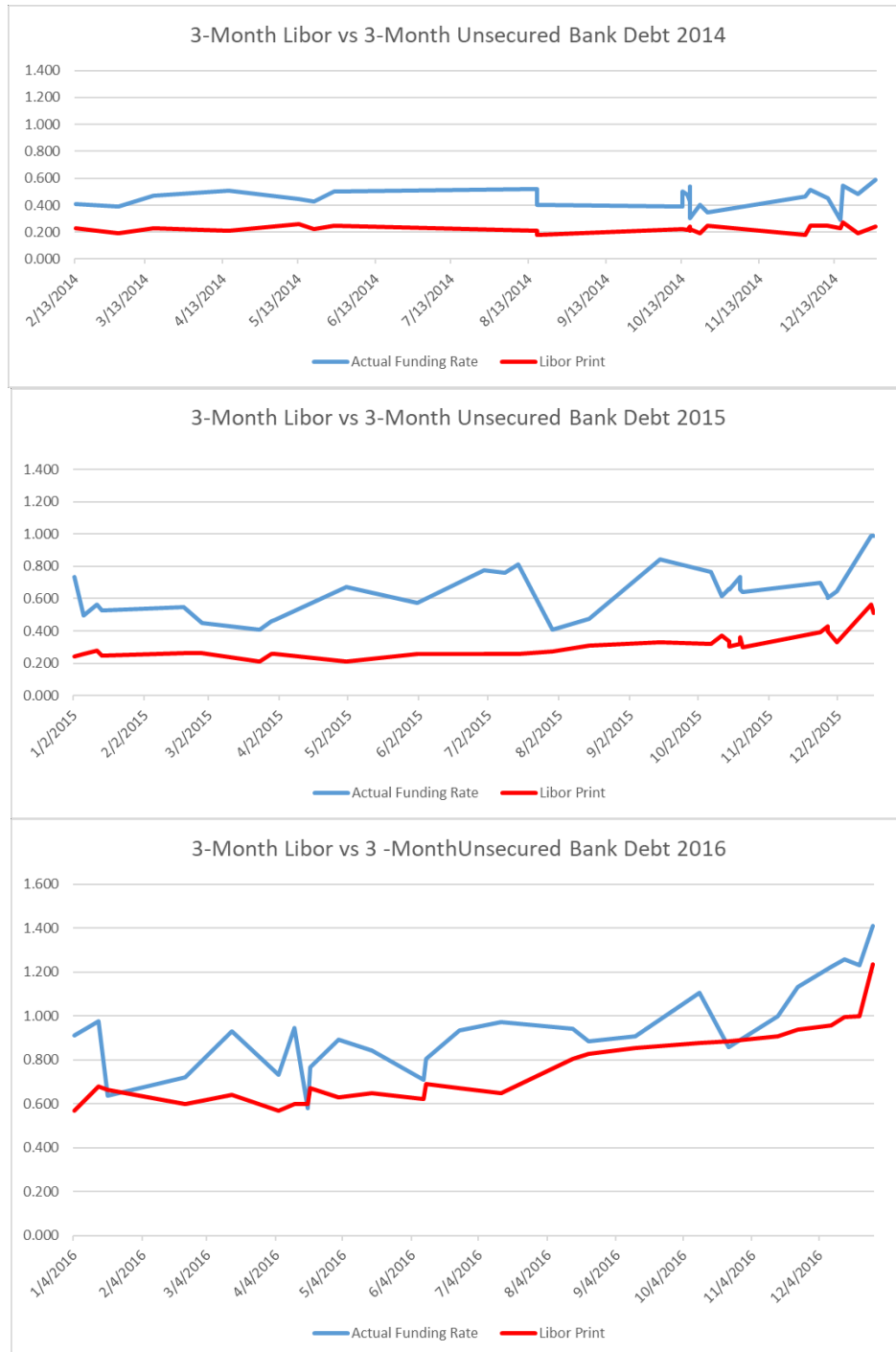
437. Not so in the case of USD ICE LIBOR. The result was 1-month and 3-month USD ICE LIBOR rates were far lower than they should have been, when viewed against the rates at which the Panel Bank Defendants’ unsecured short-dated 1-month and 3-month debt was trading, as noted above, and as reflected in the following charts:

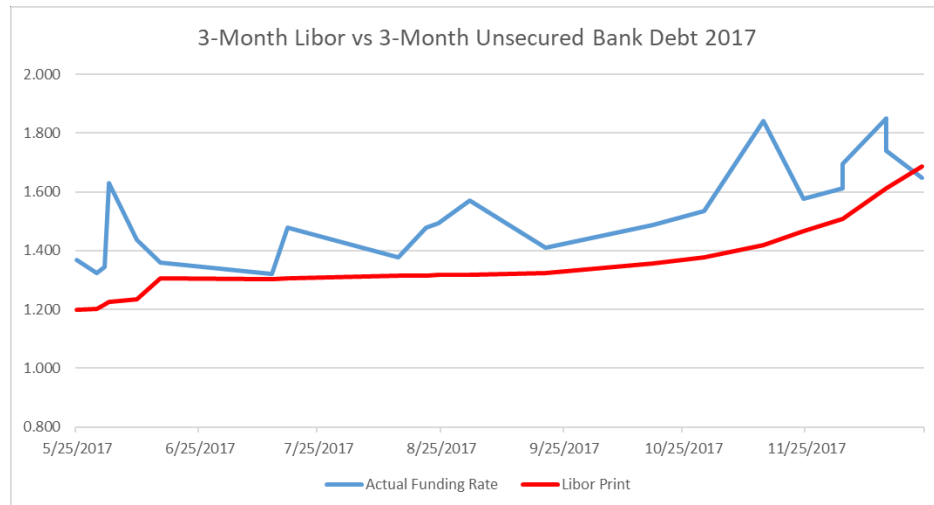
1-MONTH USD ICE LIBOR COMPARISONS



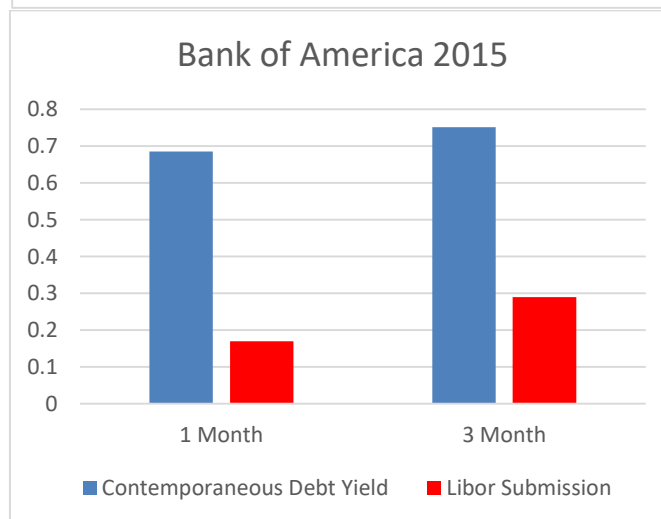
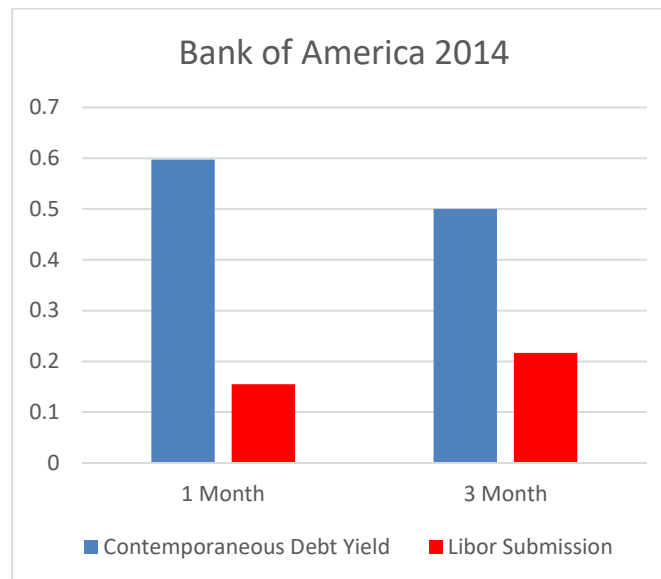


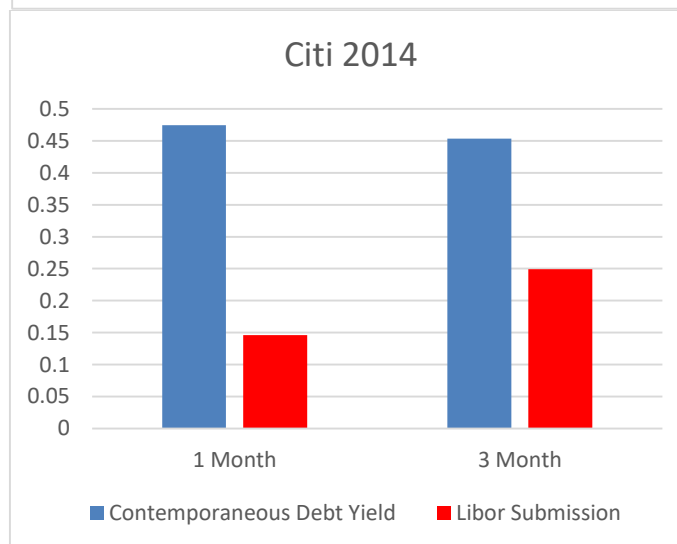
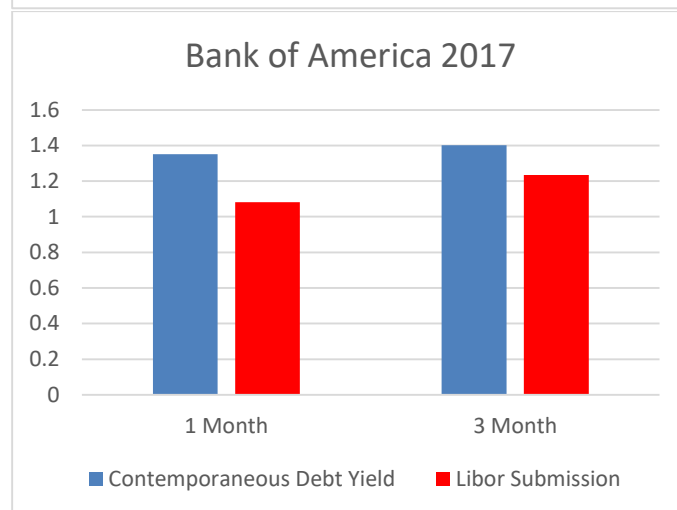
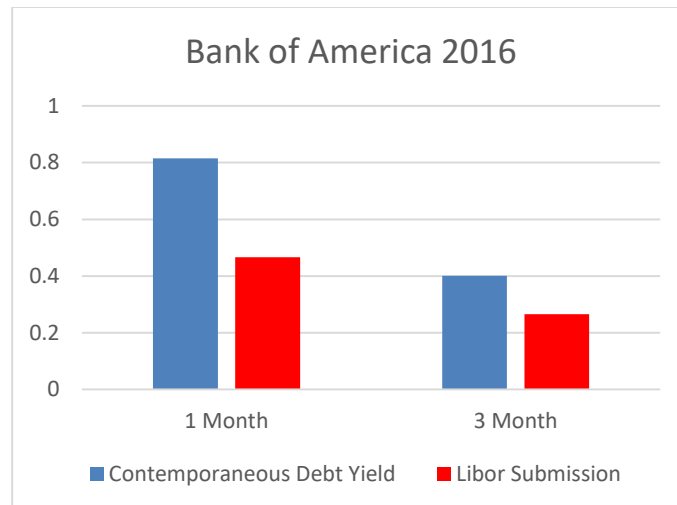
3-MONTH USD ICE LIBOR COMPARISONS

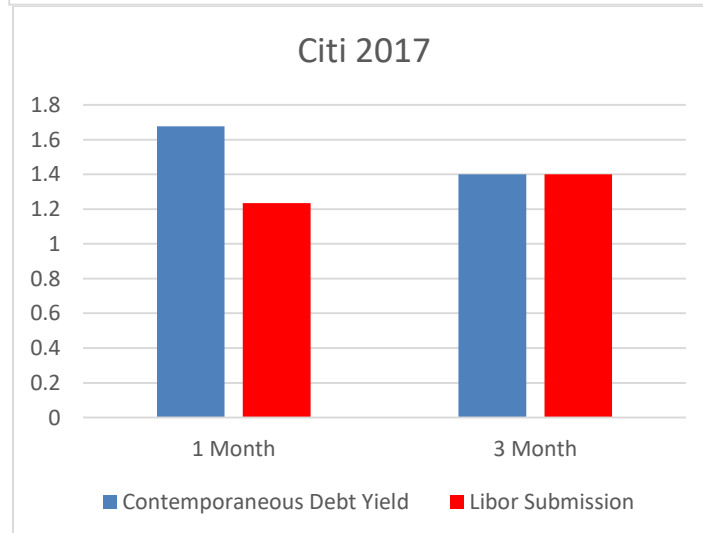
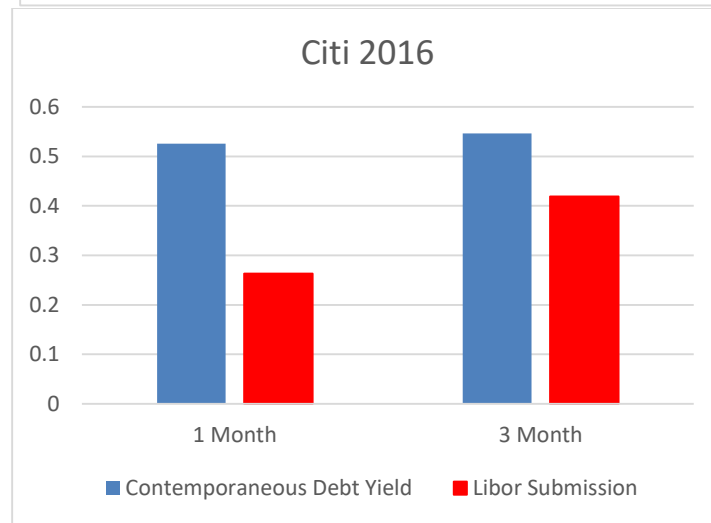
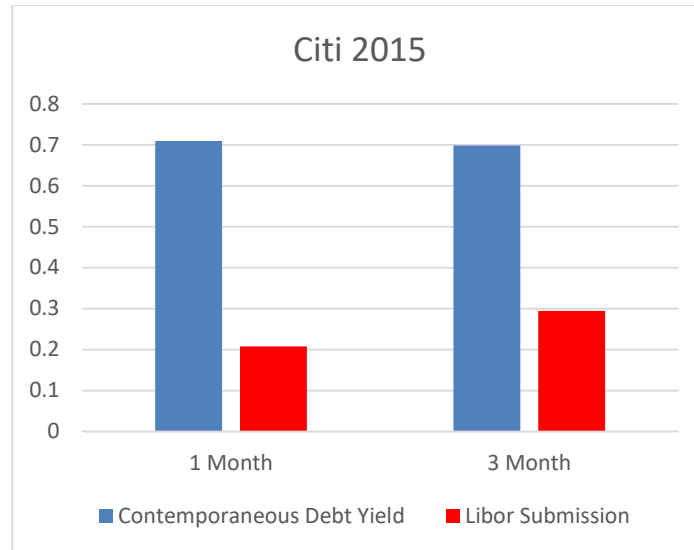


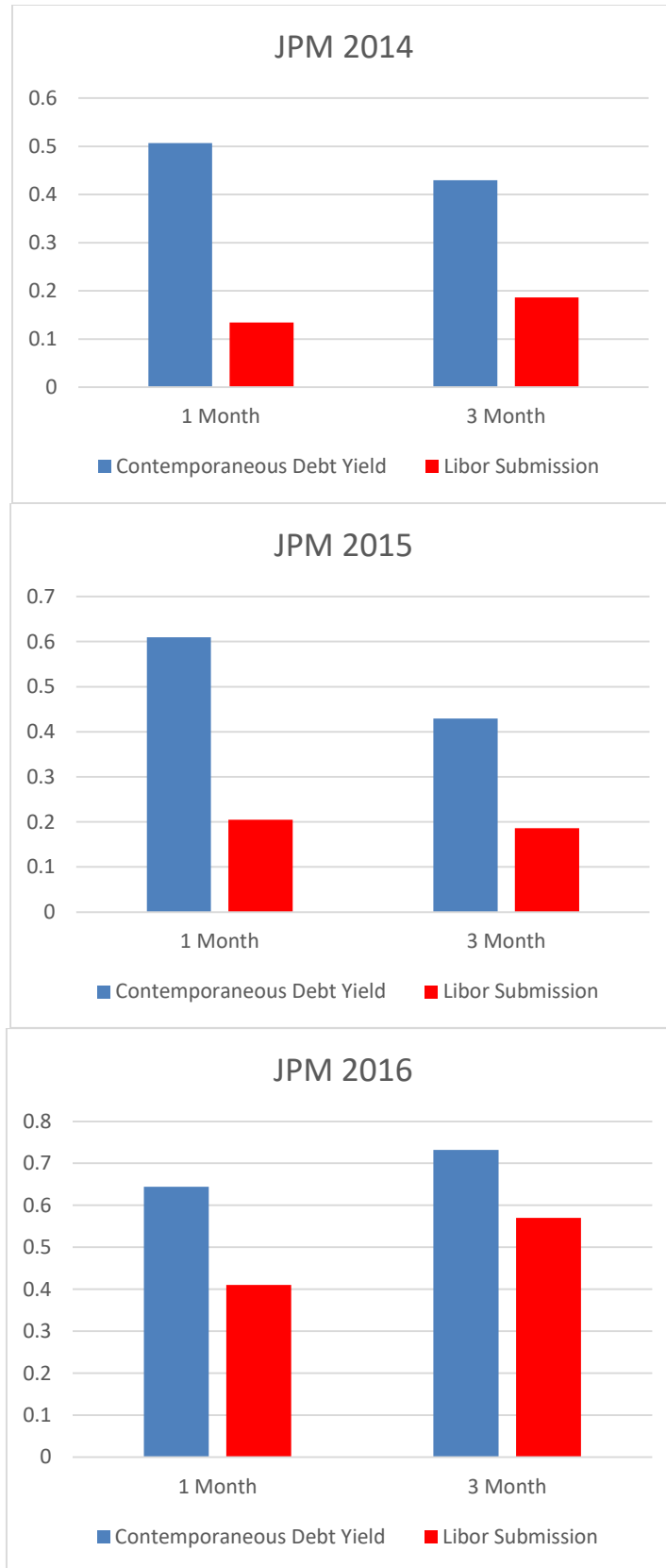


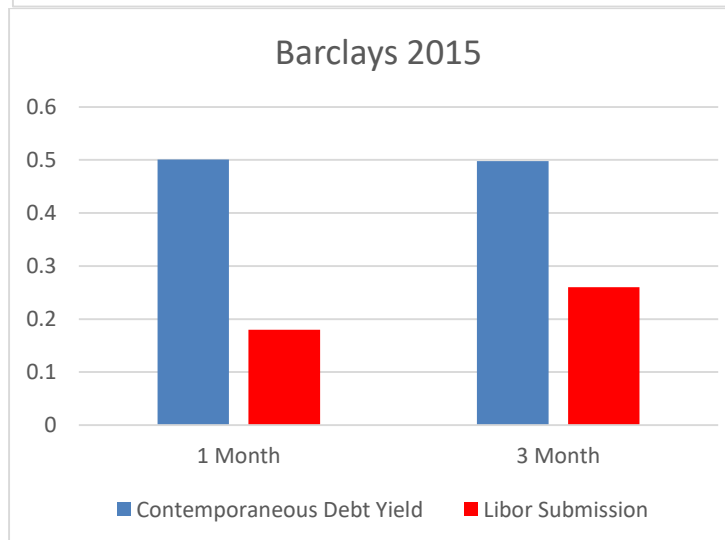
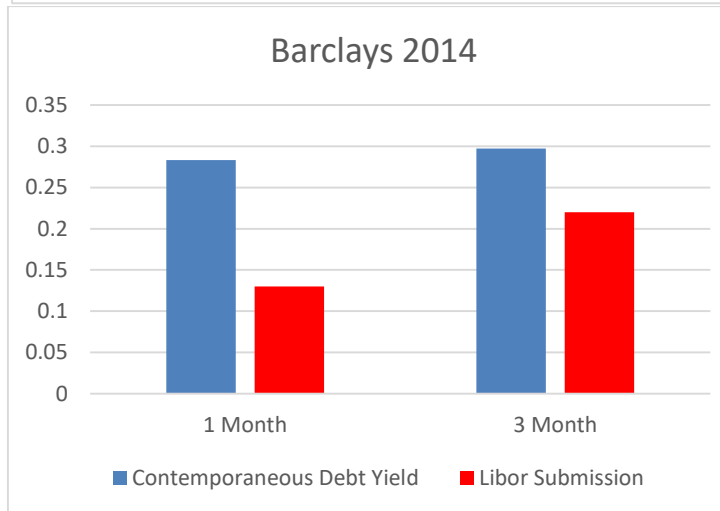
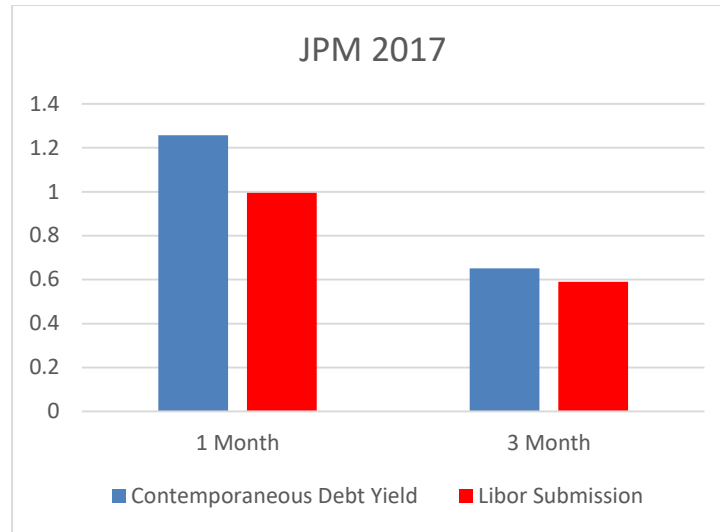
INDIVIDUAL PANEL BANK LIBOR SUBMISSION COMPARISONS

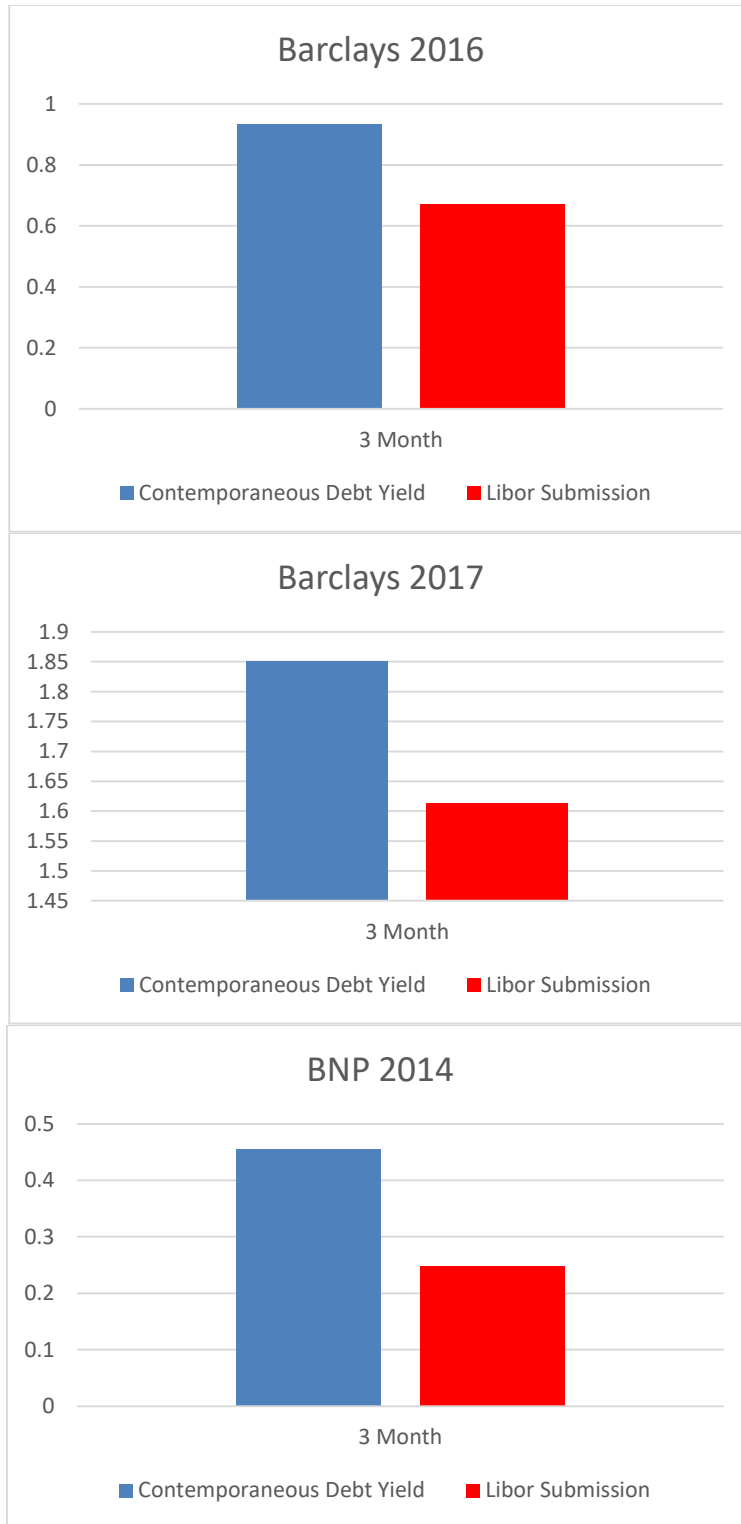


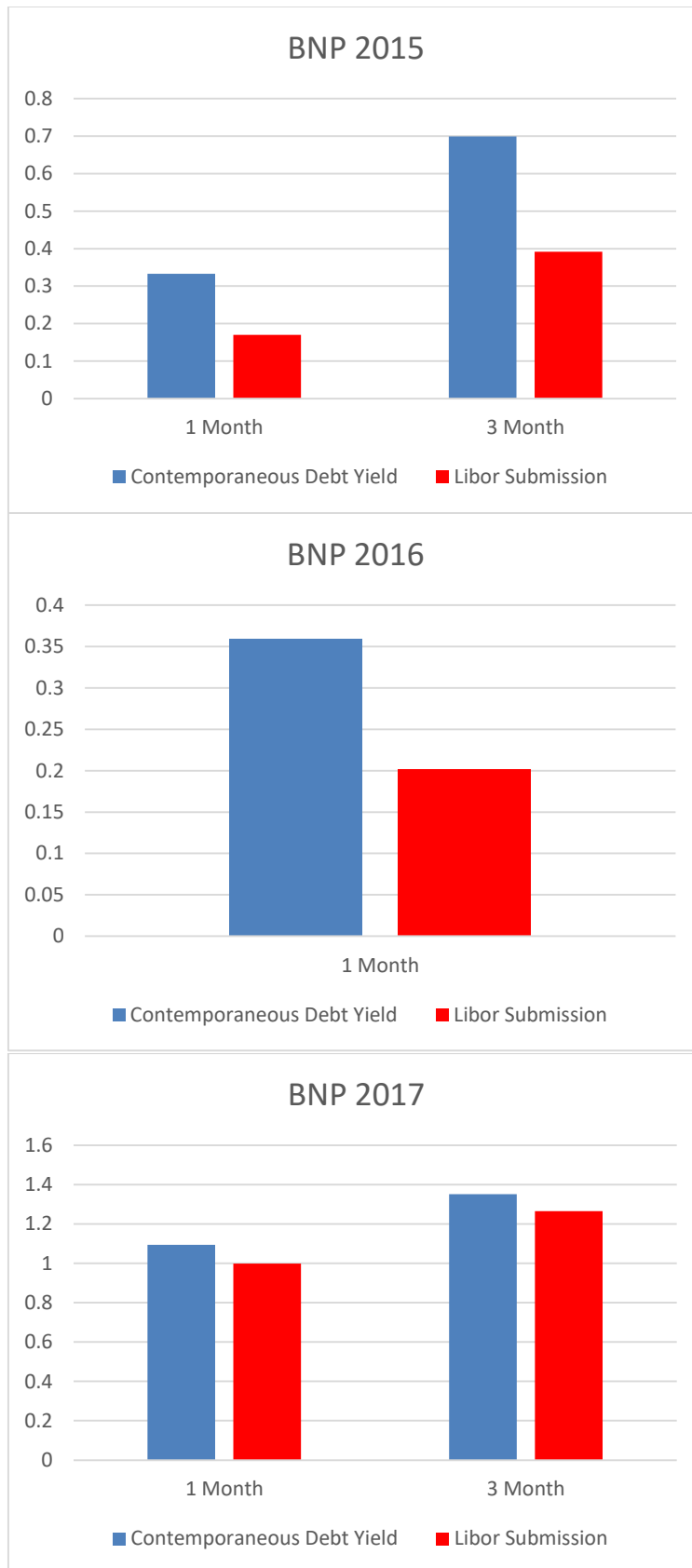


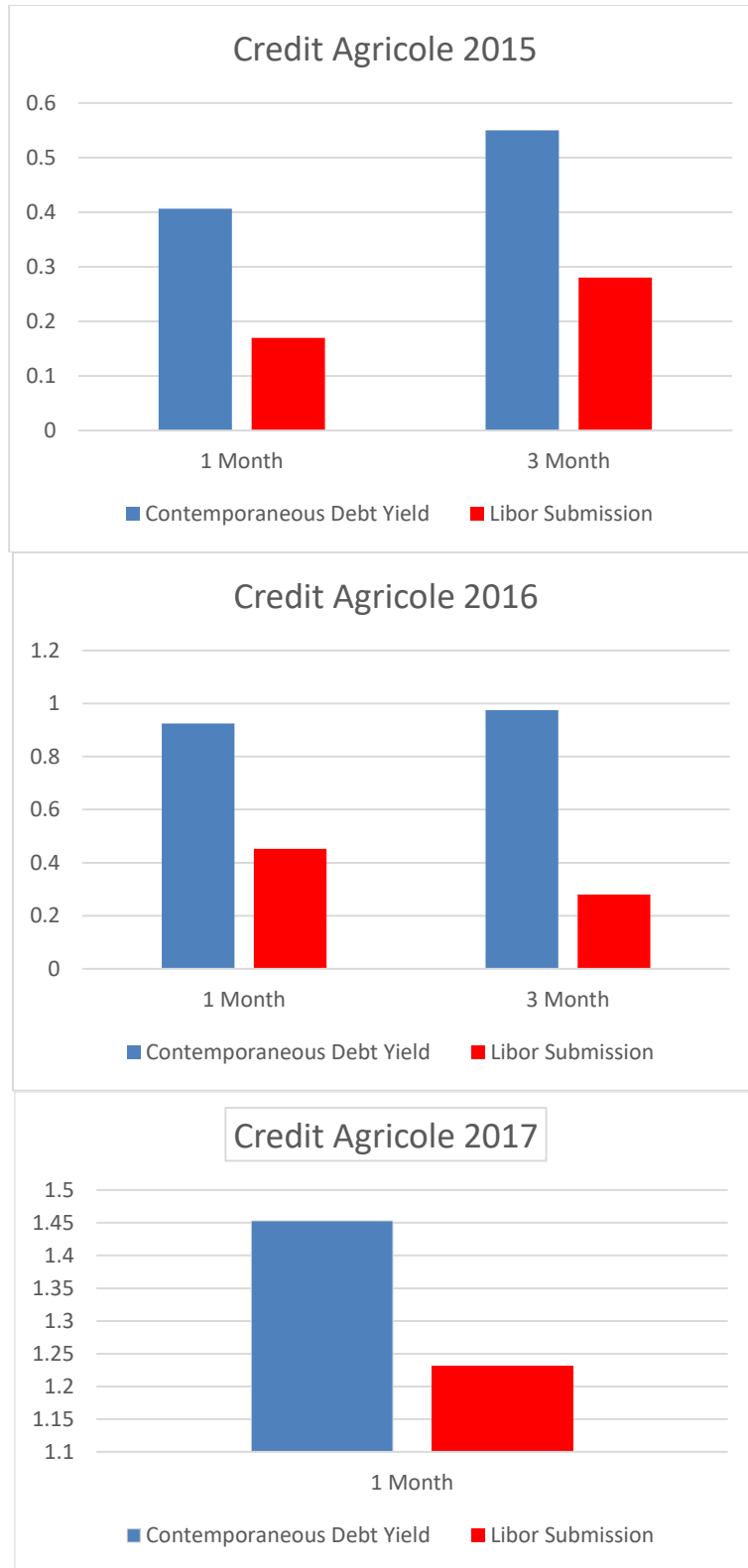


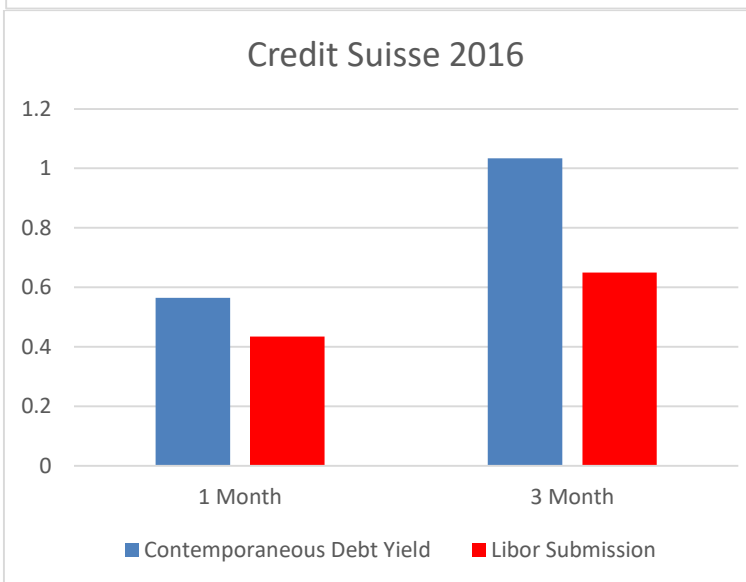
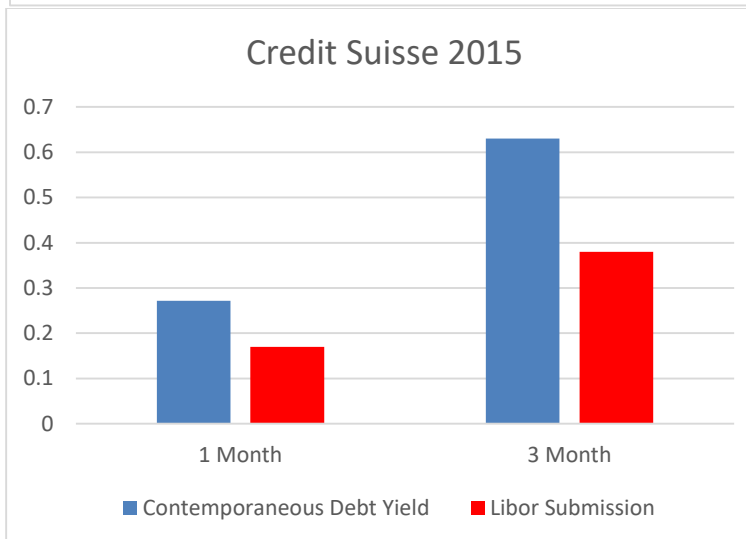
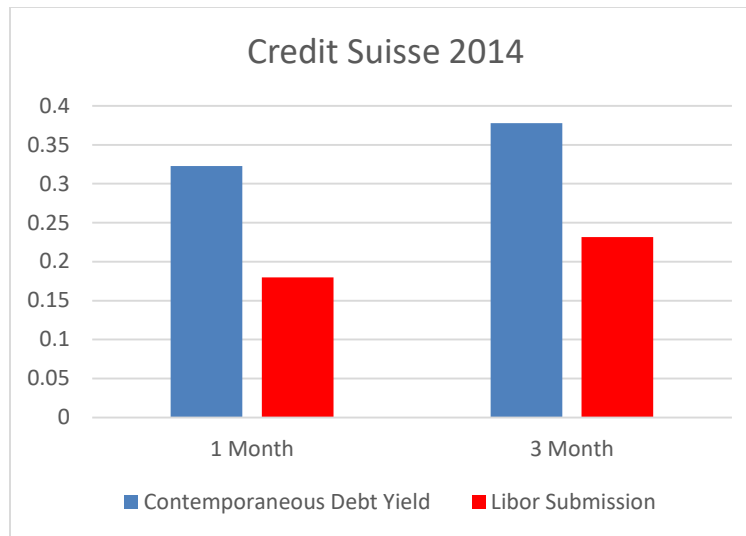


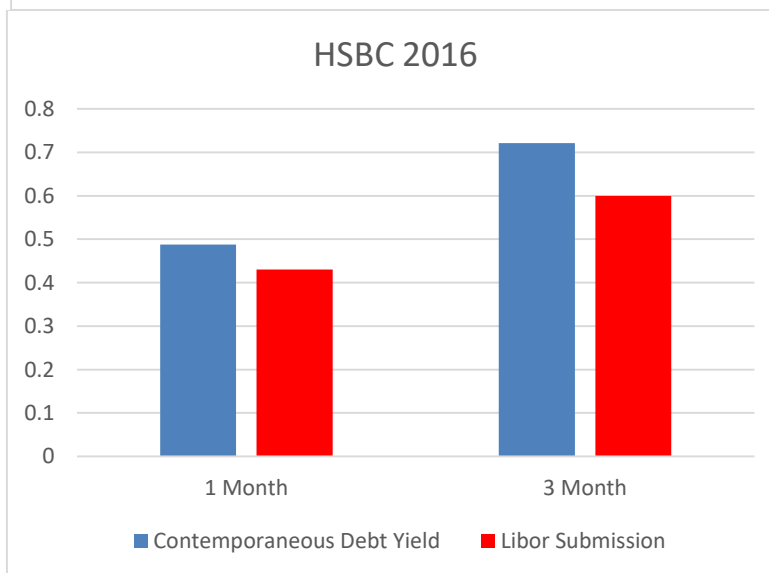
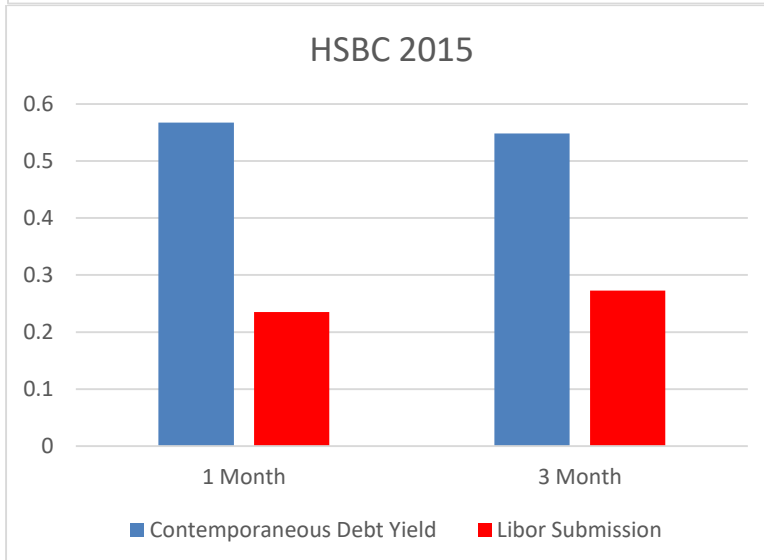
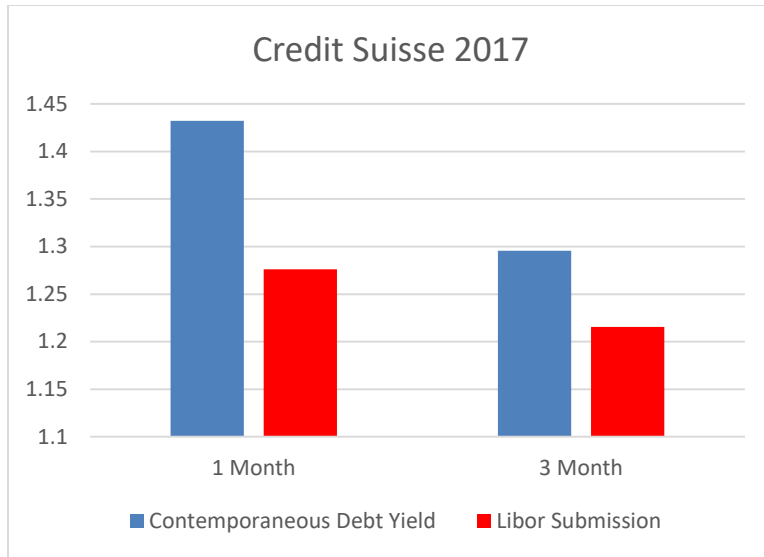


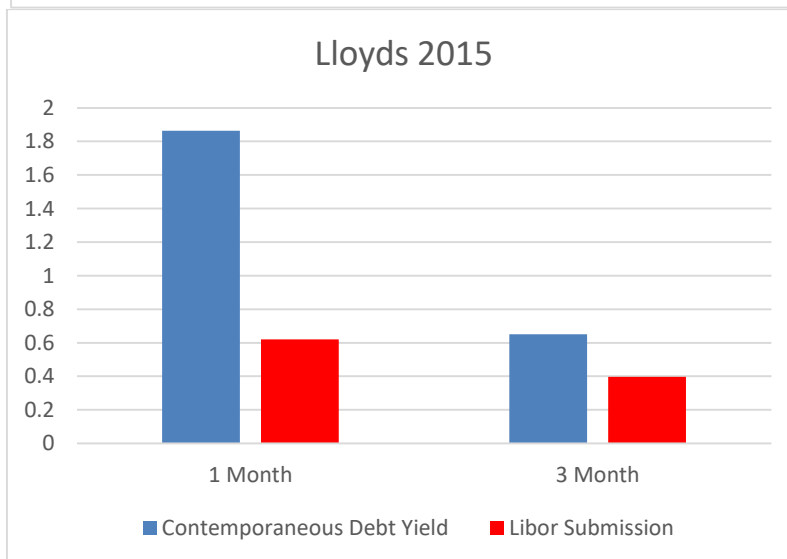
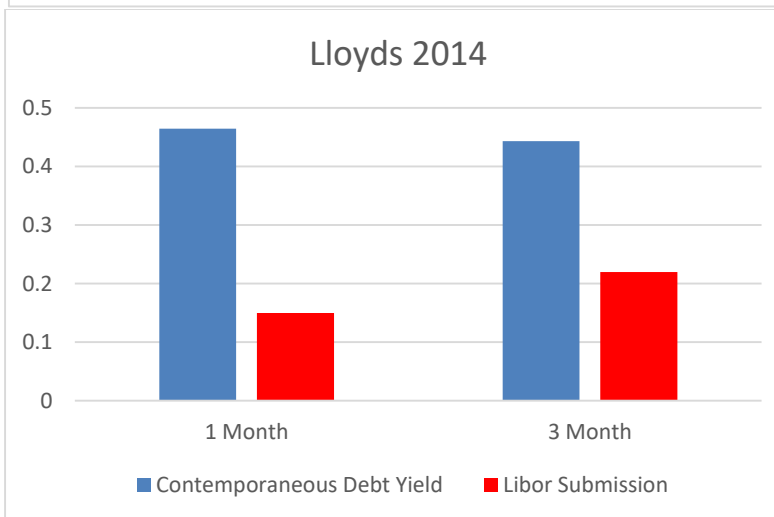
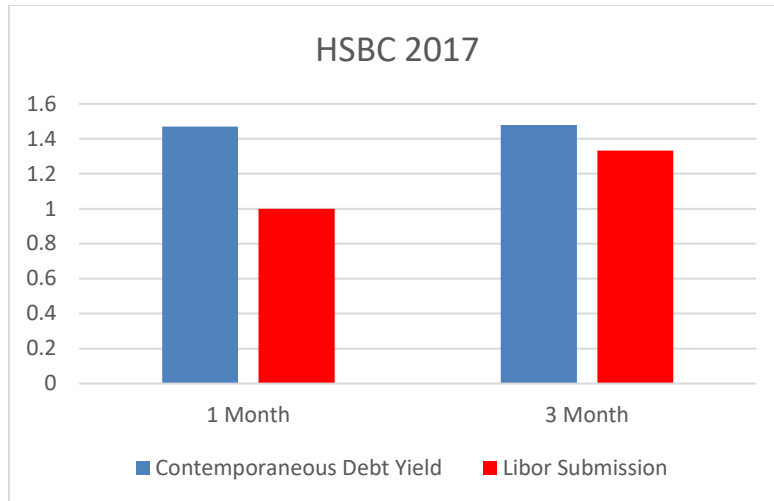


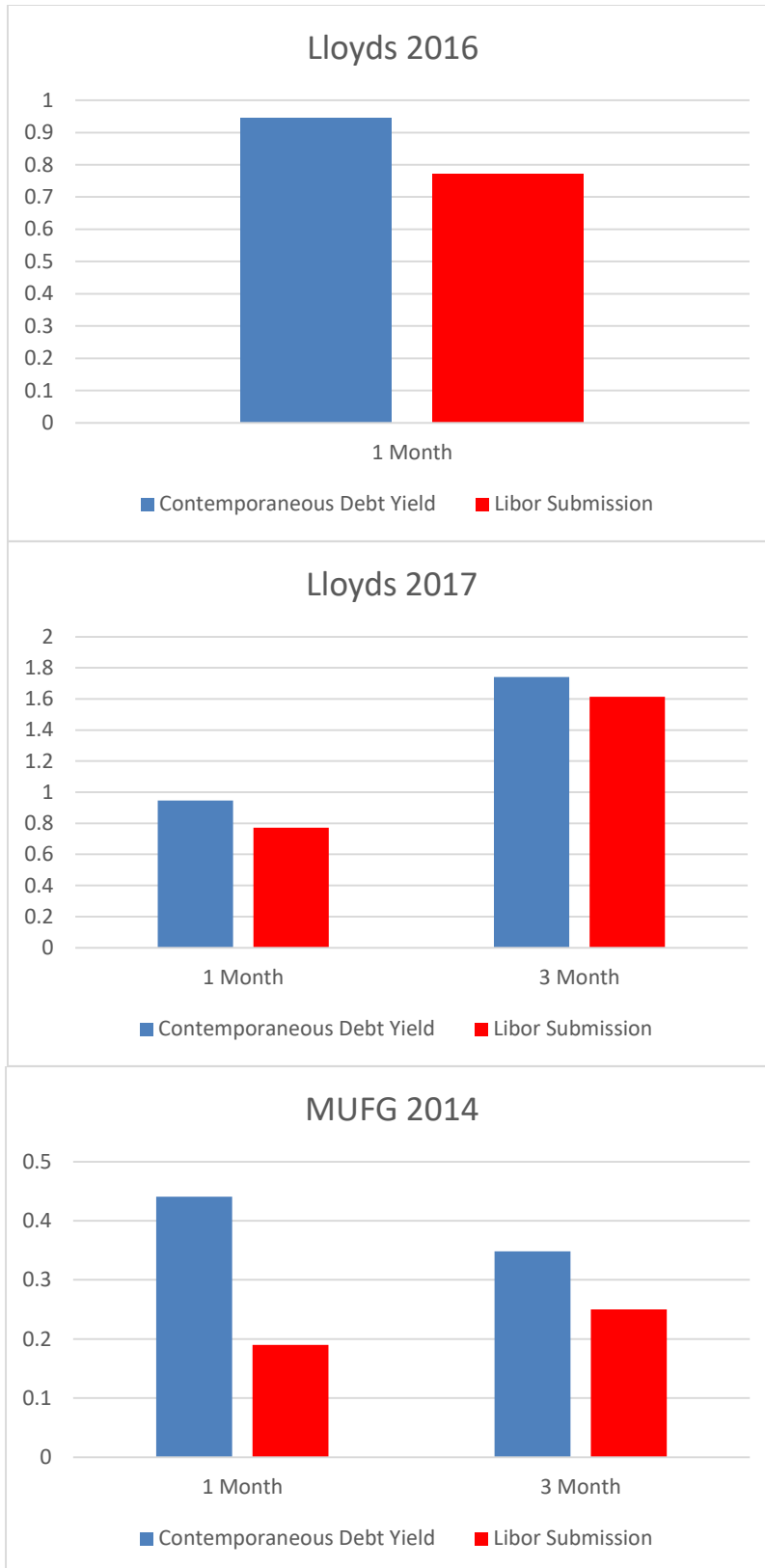


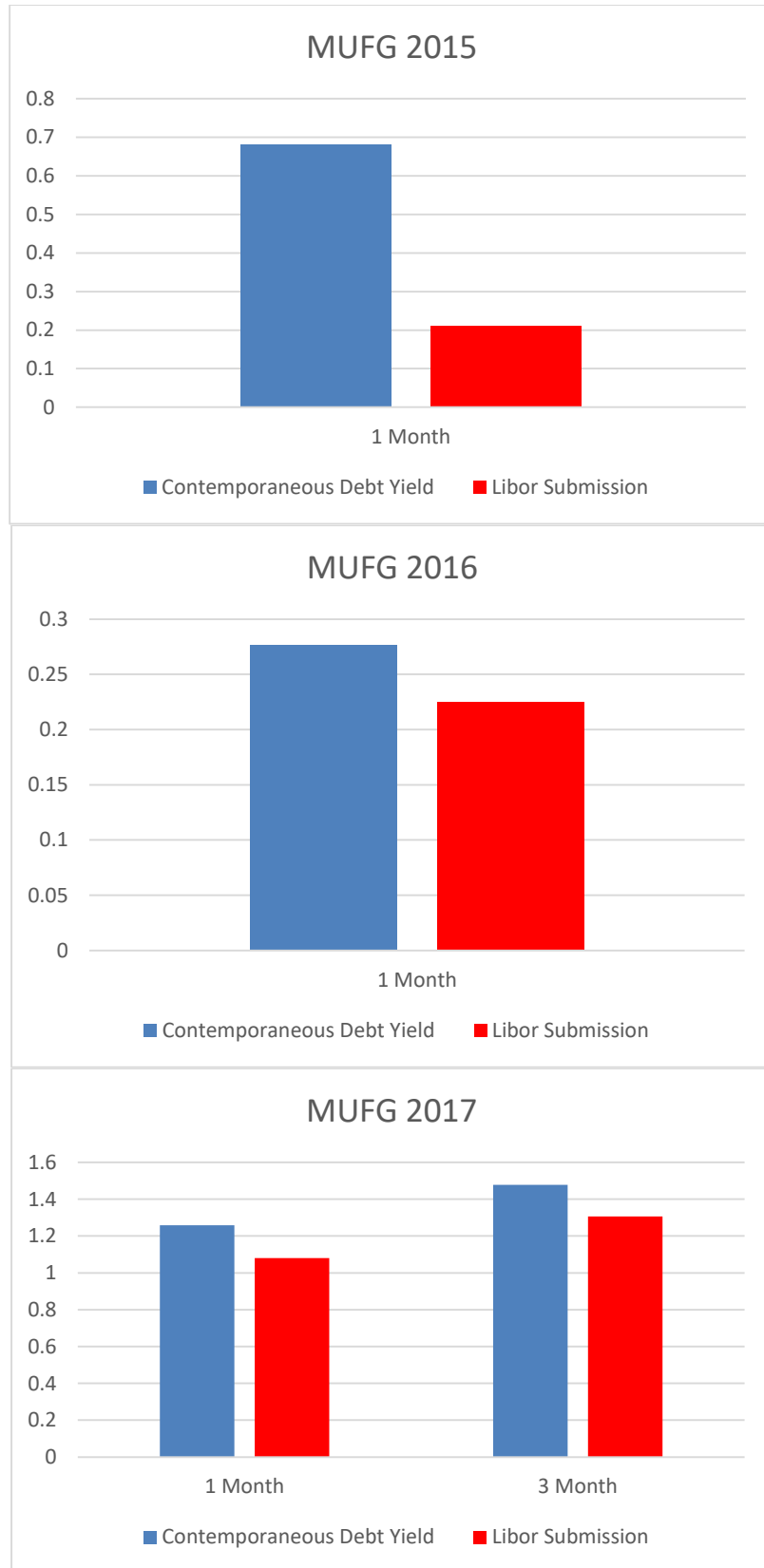


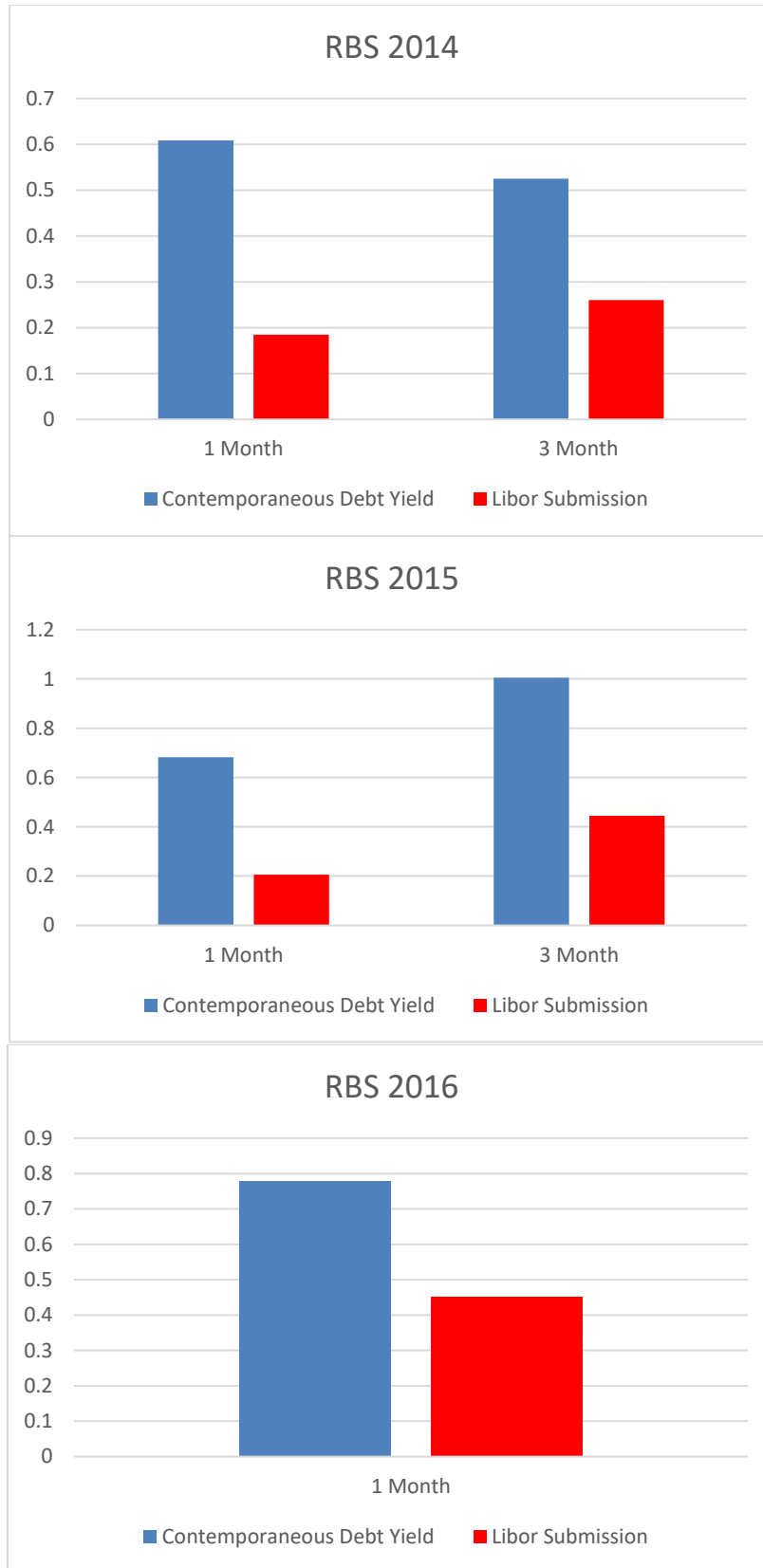


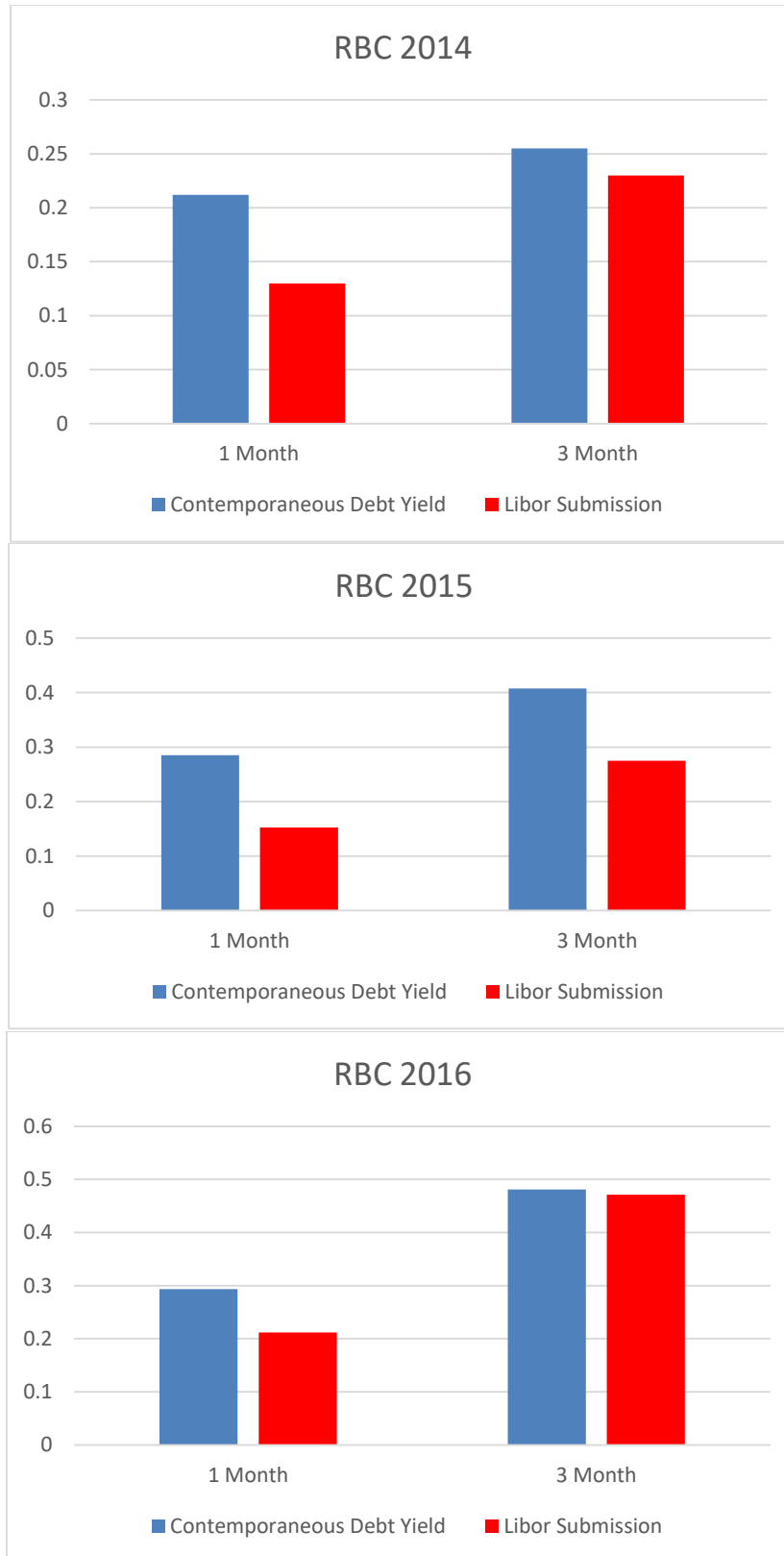


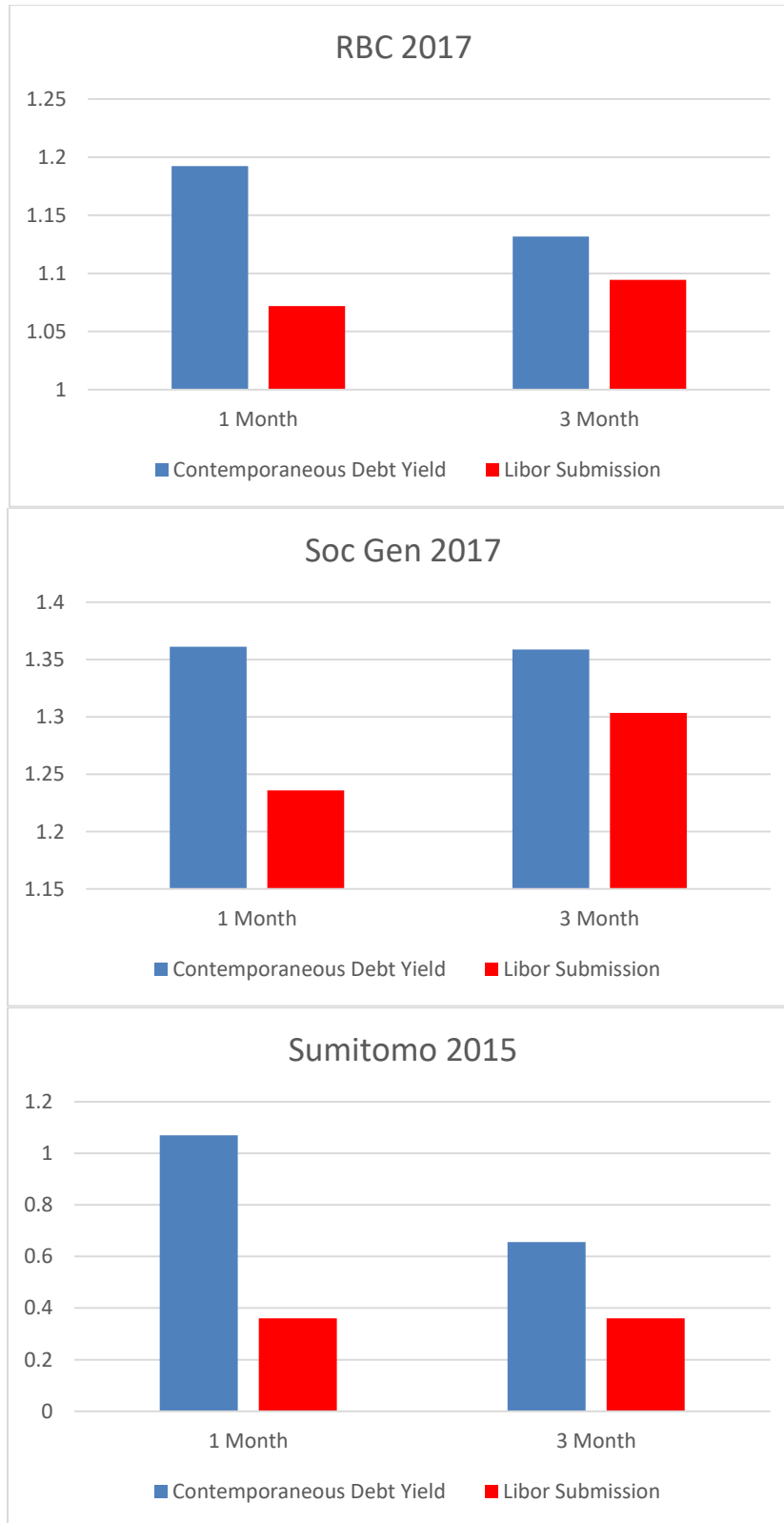


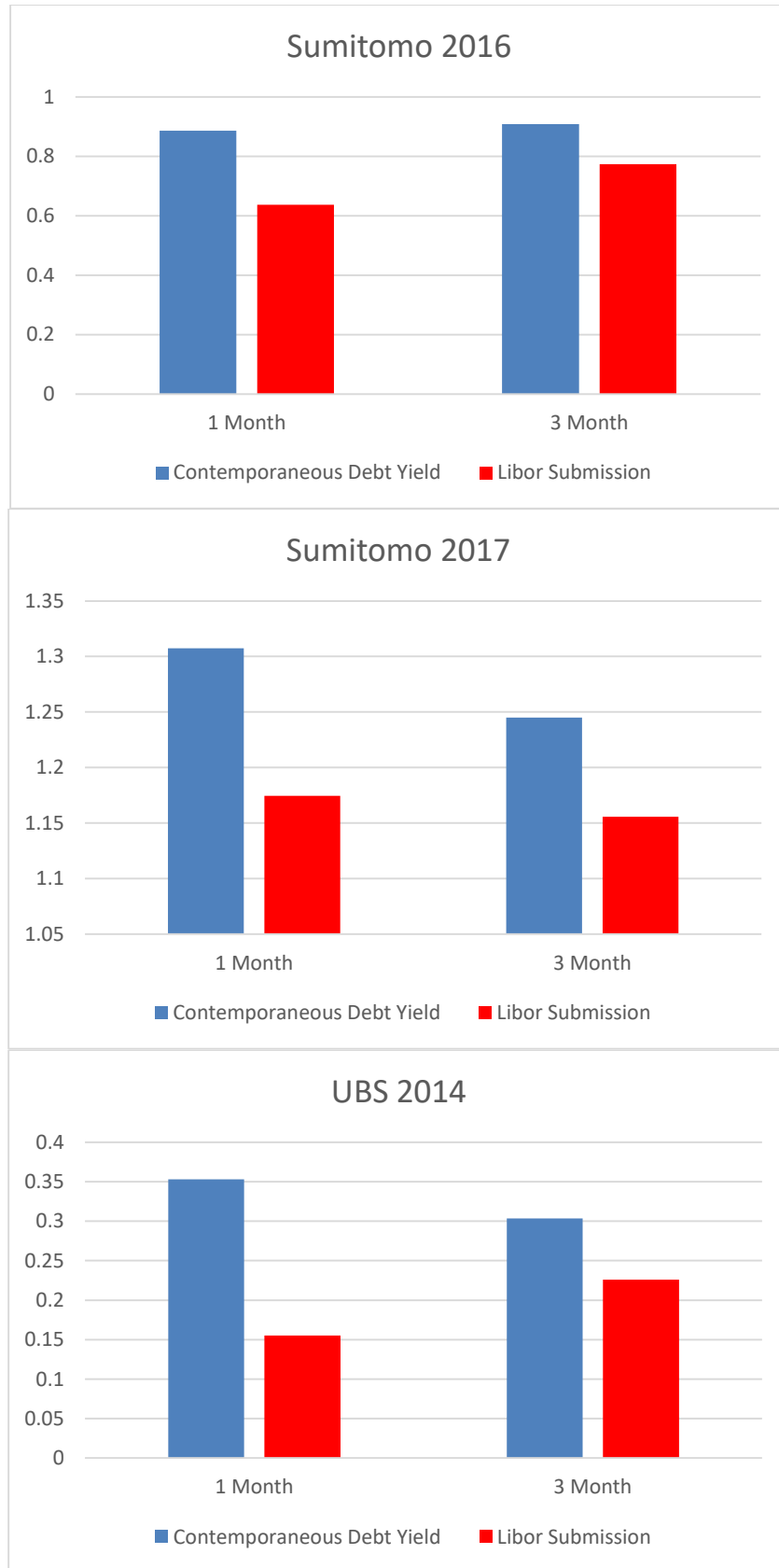


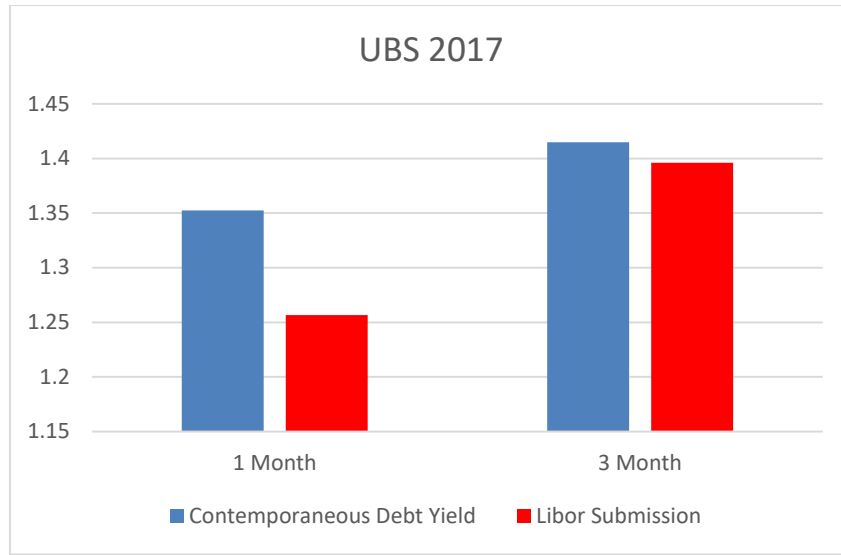












438. This analysis also shows that Panel Bank Defendants’ submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

c. General Collateral

439. A comparison of the USD ICE LIBOR submissions and USD ICE LIBOR to General Collateral (“GC”) rates also shows that USD ICE LIBOR submissions and USD ICE LIBOR did not reflect the Panel Bank Defendants’ true cost of funding and were lower than they should have been during the Class Period.

440. All else being equal, a secured rate should be substantially lower than an unsecured rate. (For example, lenders generally charge higher rates on credit cards, which are unsecured lines of credit, than they do on mortgages, which are secured by a lien on real property).

441. GC rates are benchmarks that represent average yields on repos that use U.S. government securities as collateral. As secured rates, GC rates should be substantially lower than

USD ICE LIBOR, which (purportedly) “indicates the interest rate that banks pay when they borrow on an unsecured basis.”¹⁶⁸

442. Capital adequacy ratios were established by the Basel Committee on Banking Supervision and have been adopted by most banking regulators around the world. Assets are risk-weighted to determine a base level of capital that a financial institution must hold to support its balance sheet.

443. At a minimum, the spread between GC and USD ICE LIBOR submissions should account for the cost of capital of mandated capital requirements. Interbank loans (purportedly underlying ICE LIBOR rates) are assigned a 20% risk-weighting, while U.S. government securities (underlying GC rates) are assigned a 0% risk-weighting. This implies a significant spread between ICE LIBOR and GC. Based on a blended 6.50% cost of capital during the Class Period, an unsecured loan would require an estimated 13 additional basis points in yield to account for the capital allocation.

444. USD ICE LIBOR was much closer to GC than implied, however. USD ICE LIBOR fell consistently below GC plus the 13 basis point implied spread during the Class Period. Indeed, for all comparable tenors, the actual spread between USD ICE LIBOR and GC was less than GC adjusted for the minimum spread implied by risk-weighting and the cost of capital ***more than 75% of the time*** during the Class Period.

445. This analysis also shows that Panel Bank Defendants’ submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

¹⁶⁸ ICE, Code of Conduct, Issue 5, *supra*, ¶1.2.

d. CDS Spreads

446. A Credit Default Swap (“CDS”) is a tool for hedging credit risk. The buyer of a CDS purchases the seller’s promise to pay on the occasion of a “credit event,” such as a default on the debt instrument by a third party, who is known as the underlying “reference entity.” Banks, like any other companies, can be reference entities underlying CDS contracts.

447. CDS spreads are the annual amount that a buyer pays to the seller during the period of the contract, and they represent the premium paid to transfer the credit risk associated with a reference entity. Importantly, CDS spreads often change frequently and substantially with the relative perceived creditworthiness of the reference entity.

448. A comparison of the Panel Bank Defendants’ CDS spreads relative to their respective USD ICE LIBOR submissions also indicates that the Panel Bank Defendants’ LIBOR submissions did not reflect their creditworthiness, as called for in the ICE LIBOR definition.

449. During the Class Period, the Panel Bank Defendants’ CDS spreads varied considerably over time corresponding to the Panel Bank Defendants’ perceived creditworthiness in the market. However, USD ICE LIBOR rates and spreads to U.S. Treasuries are relatively flat with no discernible relation to CDS spreads, particularly in times of stress. That is, even though the Panel Bank Defendants’ individual and collective perceived creditworthiness should have been a component of USD ICE LIBOR submissions and rates, the contemporaneous data shows that they were not.

450. The performance of the Panel Bank Defendants’ CDS can be expressed as a spread over the applicable benchmark. CDS spread performance was compared to each Panel Bank Defendants’ 1-month and 3-month “TED” spread. This TED spread shows the difference (in basis points) between USD ICE LIBOR and the closest tenor U.S. Government security. It is used as an indicator of credit risk over a risk-free rate. On the following charts for each Panel Bank “TD1”

and “TD3” represent the respective bank’s TED spread. Specifically, TD1 is the difference between the banks’ 1-month USD ICE LIBOR submission and the 1-month U.S. T-bill rate and TD3 is the difference between the banks 3-month USD ICE LIBOR submission and the 3-month U.S. T-bill rate.

451. CDS itself is a spread as opposed to a rate. It is the measurement of basis point spread over USD ICE LIBOR charged for credit protection over a specific period. Therefore, in order to ensure an accurate comparison, it’s necessary to put both indicators in comparable format and hence, CDS vs. TD1 and TD3.

452. In periods of relatively high stress, it was observed that the Panel Bank Defendants’ CDS spreads moved sharply higher while the respective individual 1-Month and 3-Month TED spreads stayed relatively constant. This implies that the Panel Bank Defendants’ daily 1-Month and 3-Month USD ICE LIBOR submissions did not account for the market’s perception of their heightened credit risk.

453. This is reflected in the following charts, which compare the Panel Bank Defendants’ respective CDS spreads to their respective 1-Month and 3-Month TED spreads, during an illustrative time within the Class Period, when the banking sector was under stress, *i.e.*, September 30, 2015 through July 30, 2016. The jagged red line represents the CDS spread for the respective Panel Bank Defendants¹⁶⁹ during periods of relative stress within the Class Period. The relatively flat yellow and blue lines on each chart show the TED spreads for 1-Month and 3-Month LIBOR submissions of those banks. The charts show that 1-Month and 3-Month Panel Bank Defendants’ respective USD ICE LIBOR submissions were untethered to the perceived

¹⁶⁹ Relevant CDS data for Norinchukin Bank and Royal Bank of Canada was unavailable and so is not a part of this analysis.

creditworthiness of the respective banks and are thus inconsistent with the requirement that USD ICE LIBOR submissions include a credit component.



JPMORGAN



BARCLAYS



BNP PARIBAS



CREDIT AGRICOLE



CREDIT SUISSE**DEUTSCHE BANK**

HSBC



LLOYDS



MUFG



RABOBANK



RBS



SUMITOMO





454. This analysis also shows that Panel Bank Defendants' submissions were consistently lower than their true expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

2. USD ICE LIBOR Submissions and Rates Violated Benford's Law

455. A generally-accepted statistical test used in forensic accounting to detect anomalies in pricing and other numerical data shows that Defendants' USD ICE LIBOR submissions and rates during the Class Period were artificial.

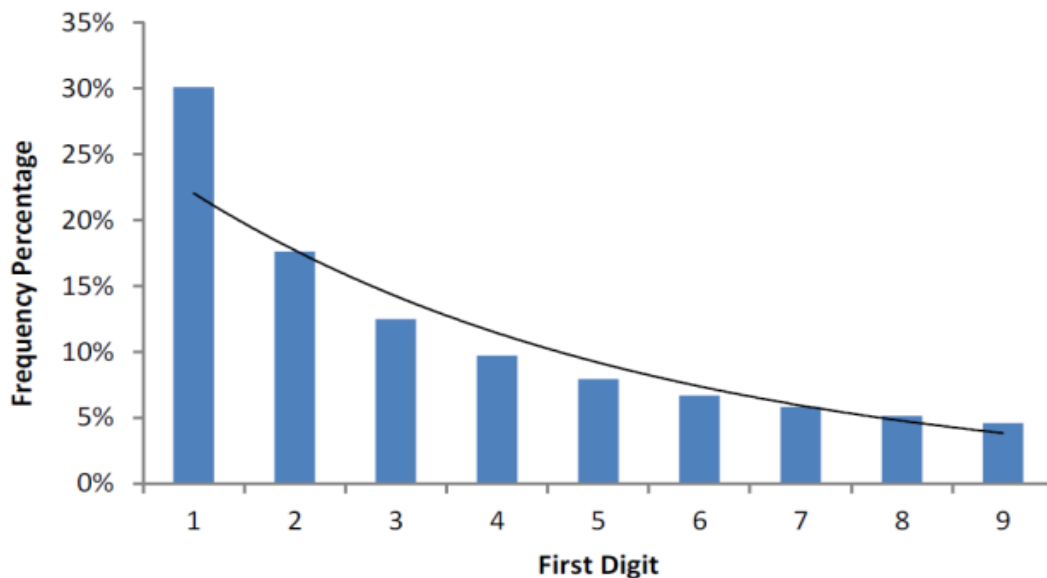
456. Benford's Law states that "in many naturally occurring tables of numerical data, the leading significant digits are not uniformly distributed as might be expected, but instead follow a particular logarithmic distribution."¹⁷⁰ That is, each digit (*i.e.*, 1-9) should occur in certain

¹⁷⁰ 10(4) 354-63 Theodore P. Hill, *A statistical derivation of the significant-digit law*, *Statistical Science* 354 (1995).

predictable frequencies. According to Panel Bank Defendant Deutsche Bank, “Benford’s law holds for global financial data and is robust over time.”¹⁷¹

457. As depicted in the chart below taken from a Deutsche Bank investor communication promoting the applicability of Benford’s Law to financial data sets, digits in data sets conforming with Benford’s Law are distributed along a smooth and predictable pattern,¹⁷² sometimes called Benford’s curve.

Figure 2: Theoretical distribution of the Benford’s law



Source: Deutsche Bank Quantitative Strategy

458. Benford Tests were performed on all publicly available published USD ICE LIBOR daily submissions and rates using the first digit of the day-to-day percentage differences for the 18 Panel Bank Defendants for each of five tenors (overnight, 1-month, 3-month, 6-month, 12-month)

¹⁷¹ Deutsche Bank Market Research, *supra*.

¹⁷² *Id.*

since ICE took over in February 2014. The test results for every Panel Bank Defendant show to *a statistical certainty greater than 99%* that their submissions did not conform to Benford's Law.

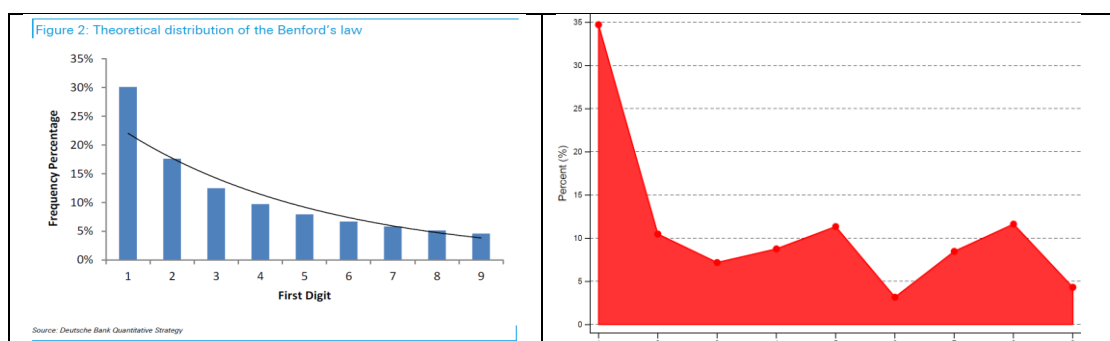
459. Benford's Law was applied to the 18 Panel Bank Defendants' USD ICE LIBOR submissions, and a Chi-squared test was applied to determine the significance of the disparities between expected and actual digit frequency results. The following table displays Chi-squared statistic values and 1-p values of the Chi-squared test showing statistical certainty of the Panel Bank Defendants' aggregated submissions' lack of compliance with Benford's Law. Banks are ranked by Chi-squared statistic values to three decimal places. The highest Chi-squared statistic is 161.70 for Royal Bank of Canada. This means to a statistical certainty of greater than 99.999%, Royal Bank of Canada's submissions are inconsistent with Benford's Law. Even for Barclays, which has the lowest Chi-squared statistic, there is 99.406% certainty that Barclays' submissions are inconsistent with Benford's Law.

**USD ICE LIBOR Submissions
Statistical Certainty of Inconsistency with Benford's Law**

Panel Bank Defendant	Chi-Squared	Statistical Certainty
Royal Bank of Canada	161.70	99.999%
MUFG	139.52	99.999%
UBS	131.15	99.999%
Citibank	115.00	99.999%
Sumitomo	87.11	99.999%
Norinchukin	83.29	99.999%
Rabobank	73.79	99.999%
Royal Bank of Scotland	70.49	99.999%
Bank of America	64.23	99.999%
Crédit Agricole	62.84	99.999%
BNP Paribas	48.16	99.999%
HSBC	43.87	99.999%
Credit Suisse	33.78	99.996%
Lloyds	33.76	99.996%
Société Générale	32.77	99.993%

Deutsche Bank	28.85	99.966%
JP Morgan	22.70	99.623%
Barclays	21.50	99.406%

460. Moreover, the artificiality confirmed by these statistics is made abundantly clear by comparing the actual distribution curves of the Panel Banks to Benford's curve. The "curve" associated with the aggregated submissions of UBS on the first digit of its day-to-day percentage differences, presents a particularly vivid example:



461. The test results for the USD ICE LIBOR rates themselves also show to a statistical certainty that USD ICE LIBOR rates did not conform to Benford's Law during the Class Period. Benford's Law was tested against the overnight, 1-month, 3-month, 6-month, and 12-month USD ICE LIBOR rates (and in the aggregate). A Chi-squared test was applied to determine the significance of the disparities between expected and actual digit frequency results.

USD ICE LIBOR Rates
Statistical Certainty of Inconsistency with Benford's Law

Tenor	Statistical Certainty
Overnight	99.990%
1-Month	99.814%
3-Month	99.950%
6-Month	99.816%
12-Month	99.586%
Aggregate	100.000%

462. This analysis shows that Panel Bank Defendants' submissions had nothing to do with their expected cost of borrowing from each other or other similar banks on an unsecured basis, as called for by the Code of Conduct during the Class Period.

F. The Depressed USD ICE LIBOR Submissions and Rates Were the Product of Collusion

463. As set forth above, all Panel Bank Defendants submitted rates lower than they should have, as indicated by multiple objective measures. Moreover, the application of Benford's Law demonstrates that the Panel Bank Defendants' submissions were artificial or, in layman's terms, simply conjured or made up. And the Panel Bank Defendants all asserted the existence of an active underlying funding market that regulators confirm does not exist.

464. This is no coincidence. Rather, all of this parallel misconduct was undertaken in the context of concerted action, for which there is both direct evidence of collusion and other factual circumstances, or "plus factors," which, when taken together, indicate that Defendants conspired to depress USD ICE LIBOR rates during the Class Period with the purpose and effect of depressing payments by Panel Bank Defendants on USD ICE LIBOR Financial Instruments directly to members of the Class in the United States.

1. Defendants’ Corruption of the Joint USD ICE LIBOR Process Turned the Joint Process into Unlawful Collusion

a. Defendants’ Corruption and Circumvention of the Rules of USD ICE LIBOR Rate-Setting Joint Process

465. Setting USD ICE LIBOR is a joint process. The joint process is concerted action that has been supposedly governed by rules put in place to ostensibly ensure that the final rate was representative of a competitive market. Through their purported “Code of Conduct” and otherwise, ICE and the Panel Bank Defendants put in place a host of policies and procedures that they have portrayed as having improved the quality and transparency of the benchmark in light of the recommendations of the Wheatley Report and like-minded calls for benchmark reform, while, at the same time, they continuously and collusively violated the rules of the process, including the fundamental rule of ICE LIBOR – the LIBOR definition itself – as set out in the Code of Conduct, Defendants thus turned the joint process into collusion.

466. **Circumventing the Rules.** From the outset, the Code of Conduct adopted at the beginning of the Class Period – like the landing page of the ICE LIBOR website, the Reuters and Bloomberg screens, and elsewhere – defined ICE LIBOR by reference to the Submission Question itself:

[Paragraph] 3.1. Contributing banks are asked to base their LIBOR submissions on a response to the question: “*At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?*”¹⁷³

467. The Code mandated “adherence to the LIBOR definition (as set out in paragraph 3.1) and the LIBOR Code.”¹⁷⁴ Such adherence required the Panel Bank Defendants to use an

¹⁷³ ICE LIBOR Code of Conduct, Issue 2, ¶3.1, *supra*.

¹⁷⁴ *Id.* ¶3.8.

“effective methodology” and to “ensure that its LIBOR submissions remain[ed] credible and robust at all times.”¹⁷⁵

468. While the Code did contemplate the use of a “range of transaction types” and “expert judgment” in determining submissions, these were to be secondary to the “*contributing bank’s transactions in [t]he unsecured inter-bank deposit market*,” and used only “*in adherence to the LIBOR definition*,”¹⁷⁶ including with “*adjustments*” as “*necessary to ensure the submission is representative of and consistent with the market for inter-bank deposits*.”¹⁷⁷ According to IOSCO, the Code thus “requires Contributor Banks to base their submissions on a hierarchy of transactions and adjust their submission to be representative of the interest that Libor seeks to measure,”¹⁷⁸ and it “*narrowly prescribe[s]*” the Panel Bank Defendants’ respective “*11 a.m. interbank deposits as the basis for submissions*.”¹⁷⁹

469. However, as regulators have explained, the interbank funding market purportedly underlying USD ICE LIBOR was far from robust and USD ICE LIBOR was not a representative rate. The lack of an active underlying market in interbank funding made USD ICE LIBOR susceptible to manipulation. Without an active underlying funding market upon which to base their submissions, the Panel Bank Defendants were able to exploit their so-called “expert judgment” to manipulate USD ICE LIBOR submissions and rates through the official rate-setting process they collectively controlled with ICE.

¹⁷⁵ *Id.* ¶3.6.

¹⁷⁶ *Id.* Annex ¶7.

¹⁷⁷ *Id.* Annex ¶8.

¹⁷⁸ IOSCO, Review of the Implementation, *supra*, at 85.

¹⁷⁹ *Id.* at 87.

470. Even the other “transaction types” that the Panel Bank Defendants were to consider and adjust for under the Code of Conduct in the absence of interbank borrowing activity were plainly ignored by the Panel Bank Defendants in formulating their submissions. To start, the Code of Conduct identifies “other deposit markets” and “central bank activity” as chief among the reference points to which submitting banks should look in formulating their USD ICE LIBOR submissions in the absence of actual interbank activity. Depositing excess reserves at the Federal Reserve and IOER was something the Panel Bank Defendants’ funding desks were acutely aware of during the Class Period. Panel Bank Defendants thus were obligated to consider IOER in formulating their submissions. As demonstrated above, 1-month USD ICE LIBOR was consistently below IOER. USD ICE LIBOR could not possibly have been set as low as it was if this rule was followed, which plainly it was not. The Panel Banks thus consciously circumvented the Code of Conduct in this way as well. Even if “IOER” was not expressly called for in the Code, being that IOER was very much on the radar of those in the bank responsible for setting USD ICE LIBOR, those submitting below IOER plainly did not honestly use their “expert judgment” in making submissions below IOER.

471. Contemporaneous trading in the panel bank’s short-dated debt instruments – another reference point that those in the bank responsible for setting USD ICE LIBOR were acutely aware of – shows that Panel Bank Defendants ignored the requirement that they look to related markets and otherwise honestly and in good faith use their “expert judgment.” Had Panel Bank Defendants used transactions in these “related” secondary markets in their own bonds during the Class Period, they would not have submitted up to 99% of the time below their yields. Doing so also circumvented the Code of Conduct in favor of manipulation.

472. Moreover, those with oversight of the USD ICE LIBOR submission process were acutely aware that General Collateral rates should be significantly below LIBOR rates due to GC being collateralized versus unsecured USD ICE LIBOR. The fact that adjusted GC rates were still above USD ICE LIBOR rates more than 75% of the time shows that Panel Bank Defendants circumvented the rules in favor of manipulation. Likewise, had the Panel Bank Defendants considered their CDS spreads during times of stress, another factor with which they also were very familiar, they would have made higher submissions, because creditworthiness is key component of unsecured USD ICE LIBOR submissions. As demonstrated above, they did not and thus chose to circumvent the rules in favor of manipulation in this way as well.

473. ICE was a willing partner with Panel Bank Defendants in corrupting the process and aided the Panel Bank Defendants by furthering and facilitating the conspiracy. Despite having the information within its control from the beginning, ICE never disclosed the lack of interbank funding, particularly the lack of interbank funding underlying USD ICE LIBOR. Like the Panel Bank Defendants, but unlike the general investing public, ICE knew at least as of the time it officially took over, that there would not be enough interbank lending transactions to support USD ICE LIBOR. It also joined the Panel Bank Defendants in violating the Code of Conduct in other ways.

474. **Sham auditing.** ICE's claims to have effectively audited USD ICE LIBOR have been a ruse. For one, the fact that IOER was consistently higher than USD ICE LIBOR submissions and rates was an obvious red flag to ICE. Even one Panel Bank Defendant submitting USD ICE LIBOR below IOER on a single day should have been deemed an obvious manifest error by that bank and by ICE. Here, all Panel Bank Defendants regularly made such submissions for years. The same can be said for ICE's failure to identify the Panel Bank Defendants' persistently

depressed submissions in relation to their contemporaneously traded debt, GC rates, and CDS spreads. These all were red flags if ICE was actually auditing for collusion rather than facilitating the conspiracy to depress USD ICE LIBOR.

475. **Sham “oversight.”** Once BBA handed over the administration duties to ICE in February 2014, ICE created the ICE LIBOR Oversight Committee consisting of employees of both ICE and IBA, ICE LIBOR submitters (such as Barclays, Lloyds, and UBS), ICE LIBOR users, and infrastructure providers, with central banks as observers. The Committee’s role was similar to ILOC and included many of the same members.

476. ICE would make clear from the start that it controlled its overseers; not the other way around. The Committee’s first Chairwoman, Joanna Perkins, was fired by ICE after lodging complaints that the Oversight Committee was insufficiently independent. As reported by the Wall Street Journal in December 2015:

The chairwoman of a committee overseeing an interest-rate benchmark at the center of a global scandal was forced out of her post after a disagreement over greater independence from the company that runs the process, according to people familiar with the matter.

Joanna Perkins, a financial lawyer who has advised regulators, left the committee in July. The company, London-based Ice Benchmark Administration, a unit of Intercontinental Exchange Inc., at the time gave no explanation for the change.

But, according to people familiar with the matter, Ms. Perkins left after months of tension with Finbarr Hutcheson, the chief executive of the IBA. Among other things, the two disagreed about how involved the committee should be in overhauling the London interbank offered rate, or Libor, said two of these people, and whether the IBA was shutting her out of important meetings with regulators. In July, Ms. Perkins was asked to step down by IBA Chairman Andre Villeneuve.¹⁸⁰

¹⁸⁰ Juliet Samuel, *Libor Oversight Chief Was Forced Out*, WALL STREET JOURNAL (Dec. 17, 2015), <https://on.wsj.com/2X7JyUE>.

477. Despite being aware that ICE LIBOR rates were not being set in the manner that had been described to the marketplace, the Committee took no meaningful action while ICE LIBOR continued to be wrongfully depressed. ICE and the other Defendants serving on the Committee used the Committee as a tool to perpetuate the conspiracy to suppress ICE LIBOR while feigning improved and robust oversight and reform to regulatory observers and investors.

478. **Misinformation campaign.** Another tool used to perpetuate the conspiracy was the misinformation ICE furnished to regulators and the public on LIBOR reforms through its website and otherwise. To start, although ICE created numerous new “versions” of the Code of Conduct that purportedly “superseded” one another, giving the appearance that more demanding objective standards by which Panel Bank Defendants would make submissions and by which ICE would monitor them were being applied; in reality, the effective Code of Conduct never changed from the original “Issue 2” version for all Panel Bank Defendants, adopted February 3, 2014, *for more than five years.*

479. This is despite the fact that all versions of the Code of Conduct invited user reliance, stating that the purpose of the Code is “to assist users of LIBOR rates when deciding whether LIBOR is an appropriate rate to use in contracts.”

480. While artfully posting these bogus Codes of Conduct, ICE similarly issued a series of “Evolution,” “Roadmap,” and multiple other documents that feigned the appearance of reform hand-in-glove with its bogus “revised” Codes of Conduct.

481. ICE’s initial “reform” publication was its “Position Paper on the Evolution of ICE LIBOR” published in October 2014.¹⁸¹ It was in this document that ICE introduced its concept of moving ICE LIBOR to a “Waterfall” submission process. According to ICE, the Waterfall, if and

¹⁸¹ ICE, *Position Paper on the Evolution of ICE LIBOR* (Oct. 20, 2014), <https://bit.ly/1t4WtAn>.

when implemented, would require submitters to use to use a stricter and more objective transaction-based methodology less reliant on interbank funding than the Submission Question that governed ICE LIBOR submissions under the Code of Conduct. However, ICE would not even claim to have fully implemented the Waterfall until April 2019, despite trumpeting its supposed reform efforts for years in numerous other documents during the Class Period.

482. ICE would publish its “Second Position Paper on the Evolution of ICE LIBOR” in July 2015.¹⁸² Among other things, it represented that its proposed reforms would be implemented by December 2016. Again, it was not until 2019 that ICE even claimed the Waterfall was fully implemented.

483. In March 2016, ICE issued its Roadmap for ICE LIBOR (“Roadmap”), which promised that, during 2016, it would “implement a uniform submission methodology,” “publish a single, clear, comprehensive and robust LIBOR definition,” and require that future submissions be “non-subjective and fully transaction-based wherever feasible.”¹⁸³ In the Roadmap, ICE reintroduced the “waterfall of submission methodologies to ensure that panel banks use funding transactions where available.”¹⁸⁴ These and other supposed modifications were summarized in the accompanying “ICE LIBOR Output Statement,” which was said to be a replacement for the Submission Question.¹⁸⁵ The Output Statement described the waterfall submission methodology, and (mis)characterized LIBOR as “a wholesale funding rate anchored in LIBOR panel banks’ unsecured wholesale transactions to the greatest extent possible, with a Waterfall to enable a rate

¹⁸² ICE, *Second Position Paper on the Evolution of ICE LIBOR* (July 31, 2015), <https://bit.ly/31SyJor>.

¹⁸³ ICE, *Roadmap for ICE LIBOR*, at ¶1.1 (Mar. 18, 2016), <https://bit.ly/2Xd57TR>.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.* at 4.

to be published in all market circumstances.”¹⁸⁶ Again, it was not until April 2019 that ICE would even claim that the Waterfall was fully implemented, just as the original “Issue 2” Code of Conduct would remain effective long after it was portrayed as superseded.

484. ICE’s misinformation campaign included bogus “superseding” Codes of Conduct as well. In August 2016, with the publication of the never-effective “Issue 3” of the Code of Conduct, ICE set forth the guidelines to be applied to all banks that “had transitioned” to the “Waterfall” methodology outlined in the Roadmap. Issue 2 of the Code continued to apply to Panel Bank Defendants “before they transition to the Roadmap methodology.”¹⁸⁷ Issue 3 reiterates much of the Roadmap, including the expectation that “Submissions will be non-subjective and fully transaction-based wherever feasible,”¹⁸⁸ and the exact text of the ICE LIBOR Output Statement,¹⁸⁹ which sets forth the Waterfall submission methodology, giving the impression of reform. ICE went so far as to pretend to mandate, for the first time in a Code, that panel banks utilize transactional data where available.¹⁹⁰ Issue 3 also purported to require Panel Bank Defendants transitioned to the Waterfall (there were none) to identify the type of submission for each tenor and provide “an explanation of the rationale and methodology used.”¹⁹¹ Of course, the reforms touted in Issue 3 of the Code were never triggered during its “effective” period – as not one single Panel Bank Defendant transitioned to the Waterfall methodology before Issue 3 was superseded.

¹⁸⁶ *Id.*

¹⁸⁷ ICE, *ICE LIBOR Code of Conduct*, at 4, Issue 3 (2016), <https://bit.ly/2JbVcnN>.

¹⁸⁸ *Id.*

¹⁸⁹ ICE Code of Conduct, Issue 3, *supra*, Annex 2.

¹⁹⁰ *Id.* at ¶3.5 & Annex 1 ¶3.

¹⁹¹ *Id.* at ¶6.5.

485. “Issue 4” of the Code of Conduct was published in March 2017, purporting to have superseded Issue 3. Again, it applied only to banks having transitioned to the Waterfall, *of which there were still exactly zero*.¹⁹²

486. In April 2018, ICE published another document it called “ICE LIBOR Evolution Report.” The Evolution Report would *reveal for the first time* that, contrary to IBA’s projections that the Waterfall methodology would be implemented in 2016, and that IBA would take over formulation of LIBOR in 2017, not one single bank had, as yet, transitioned to the Waterfall methodology, stating *in April 2018*:

IBA now intends, in the coming weeks, *to begin* the process of transitioning LIBOR panel banks to the Waterfall Methodology.¹⁹³

487. It would state later in the document that all Panel Bank Defendants on the USD ICE LIBOR panel were as of that time submitting “*in response to the LIBOR Submission Question*.”¹⁹⁴

488. Thus, through at least the first quarter of 2018, all Panel Bank Defendants were constrained only by the guidelines set forth in Issue 2 of the Code of Conduct, dating from February 3, 2014. In short, IBA failed to implement any effective reforms to the LIBOR methodology for over four years and the original Code of Conduct remained in place at least until that time.

489. **In the media.** Throughout the Class Period, ICE also has worked in the public sphere to promote the ICE LIBOR benchmark as new and improved, from re-branding it as “ICE” LIBOR to boasting about its “integrity” and “robustness” in the media. In January 2014, then-President Finbarr Hutcheson pledged, “With the support of market participants, regulators and

¹⁹² ICE, *ICE LIBOR Code of Conduct*, at 5, Issue 4 (Mar. 17, 2017), <https://bit.ly/2IQ0fn>.

¹⁹³ ICE, *ICE LIBOR Evolution Report*, at 3 (Apr. 25, 2018), <https://bit.ly/2Nczgy0>.

¹⁹⁴ *Id.* at App. 3.

stakeholders, and through enhanced checks and controls, IBA will work collaboratively to ensure full confidence in Libor.”¹⁹⁵ Later in 2014, he would report that IBA’s efforts has already rendered ICE LIBOR “ever more robust.”¹⁹⁶ In 2015, he would go on to state: “IBA is investing significant resources to strengthen the calculation methodology and governance of LIBOR in order to restore market confidence and integrity to this vital economic benchmark.”¹⁹⁷

490. Hutcheson continued his cheerleading in 2016, touting IBA’s role in monitoring ICE LIBOR, and ensuring its accuracy:

The improvements we have made in the last two years, coupled with this roadmap published today, are designed to secure LIBOR as one of the world’s most trusted, scrutinised and robust financial benchmarks.¹⁹⁸

491. According to Hutcheson, IBA was working to detect any manipulation, noting, “We built new systems to do the surveillance which run about 4m calculations every day, looking for collusion, or aberrant behaviour, or possible manipulation.”¹⁹⁹ Despite IBA’s failure to transition to the so-called Waterfall until 2019, in 2017 Hutcheson brazenly claimed, “the Libor that was produced back in ‘08 and ‘09 is very different to the one that’s produced today.”²⁰⁰

492. Hutcheson’s successor, Timothy Bowler, has continued to work to convince the public of ICE LIBOR’s ongoing vitality, arguing that it should continue as a benchmark going

¹⁹⁵ Profit & Loss, *ICE to set Libor from February* (Jan. 26, 2014), <https://bit.ly/2FMmUa3>.

¹⁹⁶ A-Team Insight, *ICE Benchmark Administration Calls for Comments on Proposed Improvements to Libor* (Oct. 21, 2014), <https://bit.ly/2xp03Nb>.

¹⁹⁷ James Langton, *LIBOR administrator proposes calculation reforms*, INVESTMENT EXECUTIVE (July 31, 2015), <https://bit.ly/2xeilR1>.

¹⁹⁸ James Langton, *ICE publishes roadmap for LIBOR reform*, INVESTMENT EXECUTIVE (Mar. 18, 2016), <https://bit.ly/2X5IYCa>.

¹⁹⁹ Tim Wallace, *These computers will stop banks’ Libor lies for good*, THE TELEGRAPH (Mar. 18, 2016) <https://bit.ly/31Yb7yz>.

²⁰⁰ Samuel Agini, *ICE benchmark chief: Libor is not dead*, FINANCIAL NEWS (Aug. 11, 2017) <https://bit.ly/2JbQaHS>.

forward. “Ice Benchmark Administration fully supports the development of alternative risk free interest rates and increasing choice to the market but we also believe that a reformed Libor could continue to exist alongside these new rates, to serve a different set of customer requirements.”²⁰¹

493. On April 1, 2019, ICE issued a press release claiming that it had “successfully completed the transition of all LIBOR panel banks to the Waterfall Methodology,”²⁰² even though ICE had made it seem as if the submission methodology had been reformed for years.

494. *However, given Defendants’ record of misinforming regulators and investors, this announcement cannot be taken at face value.*

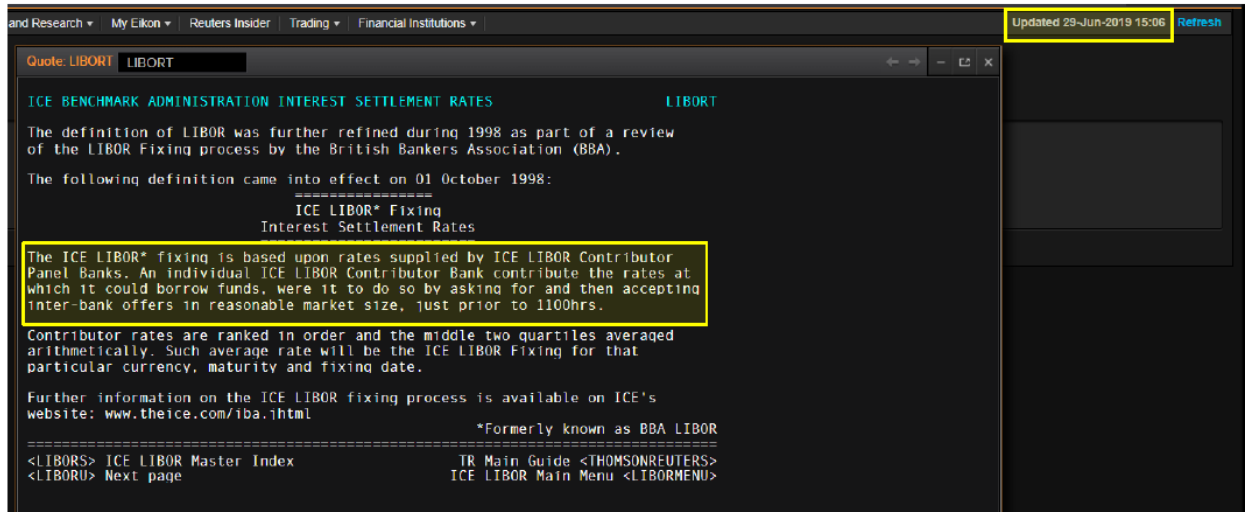
495. Even as Defendants have claimed to have moved away from the Submission Question to the so-called “Waterfall” earlier this year, both Reuters and Bloomberg, the most widely used financial information services in the U.S., and the providers of “screens” through which Defendants publish USD ICE LIBOR rates in the United States, and the “screen rates” by which USD ICE LIBOR Financial Instruments typically expressly define USD ICE LIBOR, show that *USD ICE LIBOR is still being defined by the Submission Question to this day:*

²⁰¹ HITC, *City watchdog tells banks to speed up move away from Libor*, <https://bit.ly/2X1onPf>.

²⁰² ICE, Waterfall Methodology, *supra*.

REUTERS TODAY²⁰³

The ICE LIBOR* fixing is based upon rates supplied by ICE LIBOR Contributor Panel Banks. An individual ICE LIBOR Contributor Bank contribute [sic] the ***rates at which it could borrow funds***, were it to do so by asking for and then accepting inter-bank offers in reasonable market size, just prior to 1100hrs.



BLOOMBERG TODAY²⁰⁴

ICE LIBOR Rates are based on rates quoted by ICE Contributor Banks. Every contributor bank is asked to base their ICE LIBOR submissions on the following question: “***At what rate could you borrow funds***, were you to do so by asking for

²⁰³ Reuters Screen, last visited June 29, 2019.

²⁰⁴ Bloomberg Screen, last visited June 25, 2019.

and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”

<Back> to Return

ICE Benchmark Administration Limited (IBA)

ICE LIBOR Rates are based on rates quoted by ICE Contributor Banks. Every contributor bank is asked to base their ICE LIBOR submissions on the following question: “At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”

The rates are then published at 11:45am London time daily.

Here are the number of contributing banks for the following currency panels:

US Dollar	: 18 banks
British Pound	: 16 banks
Euro	: 15 banks
Japanese Yen	: 13 banks
Swiss Franc	: 11 banks
Canadian Dollar	: 9 banks
Australian Dollar	: 7 banks
New Zealand Dollar	: 7 banks
Danish Krone	: 6 banks
Swedish Krone	: 6 banks

The full list of contributing banks for each of the currency libors is available on <https://www.theice.com/iba/jhtml>

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496. **Concealing the lack of an underlying market.** In addition to their many other misrepresentations, nondisclosures, and obfuscations, ICE and the Panel Bank Defendants also helped to further the conspiracy and conceal the lack of interbank funding underlying USD ICE LIBOR during the Class Period by disregarding a key directive in the Wheatley Report to regularly update investors on the state of interbank funding. As with other reports that would follow from other organizations calling for financial benchmark reform in the wake of the original LIBOR scandal, the Wheatley Report was resolute in its conclusion that “LIBOR submissions should be explicitly and transparently supported by transaction data.”²⁰⁵ To that end, the Wheatley Report

²⁰⁵ Wheatley Report, *supra*, at 27.

directed that ICE, as part of its duties in administering LIBOR, regularly publish “statistical bulletins on underlying trades . . . detailing the condition of the underlying market.”²⁰⁶ It explained that such a “statistical bulletin detailing the volumes of transactions that support LIBOR would be a primary instrument of user education.”²⁰⁷

The Wheatley Report provides in part:

Currently, the market for inter-bank deposits is not transparent; LIBOR users are not necessarily aware of the volumes of the inter-bank transactions that underpin the benchmark.

Better record-keeping by banks in relation to inter-bank and other transactions would allow more detailed aggregate statistics to be compiled.

These bulletins could be used to improve transparency in these markets, as well as to develop user understanding and education, which could facilitate selection of rate usage. This would help users understand the extent to which expert judgment was used for a given LIBOR benchmark.

Therefore, the Wheatley Review recommends that the new LIBOR administrator should publish a regular statistical bulletin detailing the condition of the underlying market. This publication should use the data collected from contributing banks of relevant transactions. In particular, the statistical bulletin should include the volume and value of relevant inter-bank funding transactions and other related financial instruments.²⁰⁸

497. ICE never implemented this key reform after taking over responsibility for administering LIBOR in early 2014, particularly as to disclosing interbank transactions underlying USD ICE LIBOR.

498. Instead, ICE stalled reform by keeping underlying interbank market and submission data from government regulators and the investing public, leaving the Federal Reserve to observe

²⁰⁶ *Id.* at 40.

²⁰⁷ *Id.*

²⁰⁸ *Id.*

as recently as July 2018 that since *ICE “does not release data on the transactions that actually underlie LIBOR, many may not be aware of how truly thin these markets have become.”*²⁰⁹

499. Defendants’ daily depressed USD ICE LIBOR submissions and rates themselves corrupted the joint process, as did their references to USD ICE LIBOR in the express terms of USD ICE LIBOR Financial Instruments.

500. Making depressed submissions, calculating and publishing depressed rates, and using depressed rates in USD ICE LIBOR Financial Instruments, all circumvented rules ostensibly designed to ensure that the USD ICE LIBOR rate was representative of a competitive market. By their misconduct, Defendants corrupted the joint USD ICE LIBOR rate-setting process, turning the joint process into collusion.

501. Attached hereto as **Exhibit A** is a chart containing each daily collusively depressed 1-month and 3-month USD ICE LIBOR benchmark rate, during the Class Period, from February 2014 through June 2019.

502. Attached hereto as **Exhibit B** is a chart containing each publicly-available daily collusively depressed 1-month USD ICE LIBOR submission by each Panel Bank Defendant, during the Class Period, from February 2014 through July 2016.

503. Attached hereto as **Exhibit C** is a chart containing each publicly-available daily collusively depressed 3-month USD ICE LIBOR submission by each Panel Bank Defendant, during the Class Period, from February 2014 through July 2016.

²⁰⁹ Quarles Introductory Remarks, *supra*.

b. Defendants Used Their Participation in the United States Alternative Rates Reference Committee to Thwart USD ICE LIBOR Reform and Replacement to Further Corrupt the Joint Process

504. Following the governmental investigations that focused on the original LIBOR scandal, the United States Federal Reserve formed the Alternative Rates Reference Committee (“ARRC”) to deal with the new USD ICE LIBOR. A separate body from the ICE LIBOR Oversight Committee, the members of the ARRC, particularly during the early part of the Class Period, consisted mainly of Panel Bank Defendants, and some other large banks. The first Chair of the Committee was Brian Leach of Citibank. He would be chair for the first few meetings, soon to be followed by Sandie O’Conner of JPMorgan. ICE or members of the ICE LIBOR Oversight Committee also often participated.

505. From the beginning, the ARRC members included Bank of America, Citigroup, JPMorgan, Barclays, BNP Paribas, Credit Suisse, Deutsche Bank, HSBC, RBS, Societe Generale, and UBS. Thus, many of the same banks that provided the reason for reforming and replacing BBA LIBOR in the first place, and which were now again conspiring to suppress ICE LIBOR, were in a position of control over reforming and replacing the benchmark over which they had control.

506. The Federal Reserve formed this Committee with the hope that it would assist in assessing potential reforms and/or replacements for USD ICE LIBOR in a timely manner. Defendants instead delayed reform and replacement, using the ARRC process as an anticompetitive weapon in furtherance of their price fixing conspiracy. Defendants took advantage of the positions to which they were entrusted by the Federal Reserve. Rather than work cooperatively with the Fed and other government regulators, Defendants instead feigned an interest

in reform, while actually secretly operating at cross purposes with regulators associated with the ARRC.

507. For years during the Class Period, Defendants exchanged information about USD ICE LIBOR, including whether to end it with an alternative USD benchmark rate, during Committee meetings held on a regular basis in New York, most often at JPMorgan headquarters on 270 Park Avenue. These were closed-door meetings during which Defendants and other Committee members discussed replacing LIBOR with a rate that would be based on a robust underlying market – unlike USD ICE LIBOR.

508. However, through the ARRC, Defendants were able to slow-roll the process of reforming and replacing USD ICE LIBOR and otherwise had the opportunity to collude through and around the many meetings and functions held under the auspices of the ARRC. Despite publishing a schedule in 2014 that would implement USD ICE LIBOR replacement *by September 2015*, it was *not until mid-2017 and into early 2018*, when (i) the new ICE LIBOR scandal itself started to unravel, and (ii) the ARRC committee was reconstituted at the behest of the Federal Reserve to include substantial buy-side market participants, that the ARRC began to do much of anything other than meet and talk, producing one interim report with no firm plan or recommendations years into the process.

509. All that time, Defendants continued to benefit from a suppressed USD ICE LIBOR. The ARRC thus was at once a means by which Defendants furthered the conspiracy, while it also provided ample opportunity to conspire as a collection of horizontal competitors coming together to meet about USD ICE LIBOR itself.

510. Defendants only began to reluctantly acquiesce in beginning to reform and replace USD ICE LIBOR late in the Class Period, after ICE LIBOR was exposed as a sham, likely nearing

its end, and, not unimportantly, when major buy-side market participants officially joined the ARRC, which diluted Defendants' influence on the actions of the ARRC. While the ARRC undoubtedly still provided opportunity for anticompetitive information sharing and countless interfirm communications about ICE LIBOR, that the ARRC moved so relatively quickly after the changes in 2017 and 2018, as compared to when the Defendants controlled it earlier in the Class Period, shows that Defendants used ARRC as a means to their conspiratorial end of fixing and suppressing USD ICE LIBOR to profit from depressed rates for as long as they could, abusing the ARRC process to maintain the appearance of reform to regulators and industry insiders while actually maintaining the status quo of suppressed USD ICE LIBOR rates to extend and continue to reap the benefits of their conspiracy.

511. **The ARRC.** As an outgrowth and extension of the government investigations and reform efforts stemming from the original LIBOR scandal, the “major USD swaps dealers,” a group consisting, in large part, of the Panel Bank Defendants themselves, were brought together in late 2014 to study and timely make recommendations concerning reform and replacement of USD ICE LIBOR. The Panel Bank Defendants participating in the ARRC provided individuals that were “LIBOR submitters,” as well as “experts” in “bank funding,” “short-maturity rate trading,” “derivatives trading,” and “floating rate end-user financial products.”

512. Regular meetings were “strictly confidential” and closed-door affairs. At this stage, it is only through sanitized minutes, carefully crafted reports, prepared remarks, and a very small amount of selectively released materials that the activity (and lack thereof) of the ARRC can be ascertained. Three things are certain, however: (i) the ARRC took years longer than it originally represented to recommend and implement an alternative to USD ICE LIBOR; (ii) it acted in earnest only once (a) the new ICE LIBOR scandal began to unravel in 2017, and (b) the ARRC was

reconstituted in 2018 to include major buy-side participants diluting Defendants' influence; and (iii) the ARRC provided ample opportunity to conspire before, during, and after the meetings, not to mention the many subcommittee and working group meetings and communications for which no minutes have been published.

513. The timeline to which the ARRC originally committed called for swift and certain action and would have precluded Defendants from continuing their price-fixing conspiracy beyond 2015. The November 2014 "Terms of Reference," or rules of the Committee, set out the following schedule for replacing USD ICE LIBOR:

Timeline

- November 2014: Initial meeting of the Working Group
- December 2014: Working Group determines organizational structure
- January 2015: Working Group delivers detailed work plan
- March 2015: Identification of alternative reference rates
- May 2015: Working group delivers plan to make contracts more robust
- June 2015: Adoption plan developed and begin steps to implement
- September 2015: Implementation begins

514. However, Defendants ensured that this schedule would never be met and the ARRC, dominated as it was by Defendants, would come nowhere close to meeting these milestones. Despite holding dozens of regular meetings starting in 2014, the process dragged on for years past the original September 2015 deadline – and made real progress on reforms only after Defendants had lost their grip on the ARRC.

515. **The ARRC Meetings.** Minutes of the ARRC reflect that the ARRC held dozens of regular in-person meetings in New York, in which many Defendants participated, and during which the participants specifically discussed USD ICE LIBOR. Specifically, domestic Panel Bank Defendants Bank of America, Citibank, and JPMorgan, as well as a number of foreign-based Panel

Bank Defendants – Barclays, BNP Paribas, Credit Suisse, Deutsche Bank, HSBC, RBS, Societe Generale, and UBS – participated in numerous ARRC meetings in-person, in New York.

516. Despite the involvement in the process and attendance at meetings by government regulators, Defendants abused this process for years. In addition to the numerous ARRC subcommittee and working group meetings, roundtables, calls, and other interfirm communications during the Class Period in which Defendants participated, there have been 35 documented closed-door meetings held on the following specific dates, in the following specific New York locations, during the Class Period, where the following Defendants came together and discussed USD ICE LIBOR, providing them an opportunity to further their conspiracy:

MEETING NUMBER	MEETING DATE	MEETING LOCATION	DEFENDANTS PRESENT AT CLOSED-DOOR MEETINGS
1	12/12/2014	270 Park Avenue 2nd Floor, Room 207 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
2	01/22/2015	270 Park Avenue 11th Floor, Room 1103 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
3	02/19/2015	270 Park Avenue 11th Floor, Room 1103 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
4	04/02/2015	270 Park Avenue 2nd Floor, Room 207 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
5	05/26/2015	270 Park Avenue 2nd Floor, Room 207 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, HSBC, JPMorgan, RBS, Societe Generale, and UBS
6	06/11/2015	270 Park Avenue 2nd Floor, Room 208 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS

MEETING NUMBER	MEETING DATE	MEETING LOCATION	DEFENDANTS PRESENT AT CLOSED-DOOR MEETINGS
7	07/17/2015	383 Park Avenue New York, NY 10022	Bank of America, Barclays, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS.
8	09/29/2015	270 Park Avenue 2nd Floor, Room 208 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
9	10/22/2015	270 Park Avenue 11th Floor, Room 1103 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, HSBC, JPMorgan, RBS, Societe Generale, and UBS
10	12/03/2015	383 Madison Avenue Room 1205 New York, NY 10017	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, and UBS
11	01/28/2016	270 Park Avenue 11th Floor, Room 1105 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
12	02/25/2016	270 Park Avenue 11th Floor, Room 1105 New York, NY 10172	Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, and UBS
13	04/14/2016	270 Park Avenue 11th Floor, Room 1103 New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, and UBS
14	05/19/2016	383 Madison Avenue Room 1311 New York, NY 10017	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
15	07/28/2016	270 Park Avenue 11th Floor, Room 1103 New York, NY 10172	Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
16	09/23/2016	270 Park Avenue 11th Floor New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
17	12/01/2016	270 Park Avenue 11th Floor New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS

MEETING NUMBER	MEETING DATE	MEETING LOCATION	DEFENDANTS PRESENT AT CLOSED-DOOR MEETINGS
18	02/22/2017	270 Park Avenue New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
19	04/12/2017	270 Park Avenue 2nd Floor New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
20	06/16/2017	33 Liberty Street New York, NY 10045	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
21	06/22/2017	270 Park Avenue 11th Floor New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
22	08/01/2017	270 Park Avenue New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
23	09/29/2017	270 Park Avenue 2nd Floor New York, NY 10172	Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, RBS, Societe Generale, and UBS
24	03/22/2018	270 Park Avenue 11th Floor New York, NY 10172	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JPMorgan
25	04/17/2018	10 East 53rd Street 8th Floor New York, NY 10022	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JPMorgan
26	05/17/2018	383 Madison Avenue, New York, NY 10017	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JPMorgan
27	06/18/2018	10 East 53rd Street 8th Floor New York, NY 10022	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
28	07/24/2018	10 East 53rd Street 8th Floor New York, NY 10022	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JPMorgan

MEETING NUMBER	MEETING DATE	MEETING LOCATION	DEFENDANTS PRESENT AT CLOSED-DOOR MEETINGS
29	09/20/2018	10 East 53rd Street 8th Floor New York, NY 10022	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
30	10/18/2018	300 Vesey Street New York, NY 10282	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
31	12/05/2018	383 Madison Avenue, New York, NY 10017	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
32	01/15/2019	300 Vesey Street New York, NY 10282	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
33	02/28/2019	466 Lexington Avenue New York, NY 10017	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
34	04/11/2019	787 Seventh Avenue New York, NY 10019	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan
35	05/16/2019	466 Lexington Avenue New York, NY 10017	Bank of America, Citigroup, Deutsche Bank, HSBC, Intercontinental Exchange, and JP Morgan

517. Meeting minutes and materials make clear that ICE and ICE LIBOR were main topics of discussion at these meetings and provide insight into at least some of the “who”, “what”, “when”, and “where,” of the regular ARRC meetings from 2014-2019.

518. **ARRC Meetings (December 2014-June 2017).** For example, on **December 12, 2014**, the ARRC held a meeting from 4:00-5:00 p.m. in Room 207 at JPMorgan’s offices at 270 Park Avenue, 2nd Floor, New York, New York.

519. The minutes of this meeting reflect that the Chair emphasized that individuals from the banks should have “LIBOR submitters,” as well as “experts” in “bank funding,” “short-

maturity rate trading,” “derivatives trading,” and “floating rate end-user financial products,” as representatives on the Committee.

520. In addition, the ARRC decided it would be regularly kept informed as to what ICE was doing with respect to its purported reforms to the USD ICE LIBOR process, which provided the Panel Bank Defendants with far more insight into the workings of ICE and the ICE LIBOR Oversight Committee than was portrayed by ICE. The ICE updates given to Panel Bank Defendants through the ARRC had a synergistic effect on Defendants’ opportunity to conspire – not only did the ARRC meetings provide Panel Bank Defendants with unique opportunities to conspire but also allowed Panel Banks the opportunity to monitor what ICE and the ICE LIBOR Oversight Committee were doing. Unsurprisingly, the ICE updates would be a mainstay of the ARRC meetings throughout the Class Period.

521. The following representatives of Defendants participated in the December 12, 2014 meeting either in person or by phone:

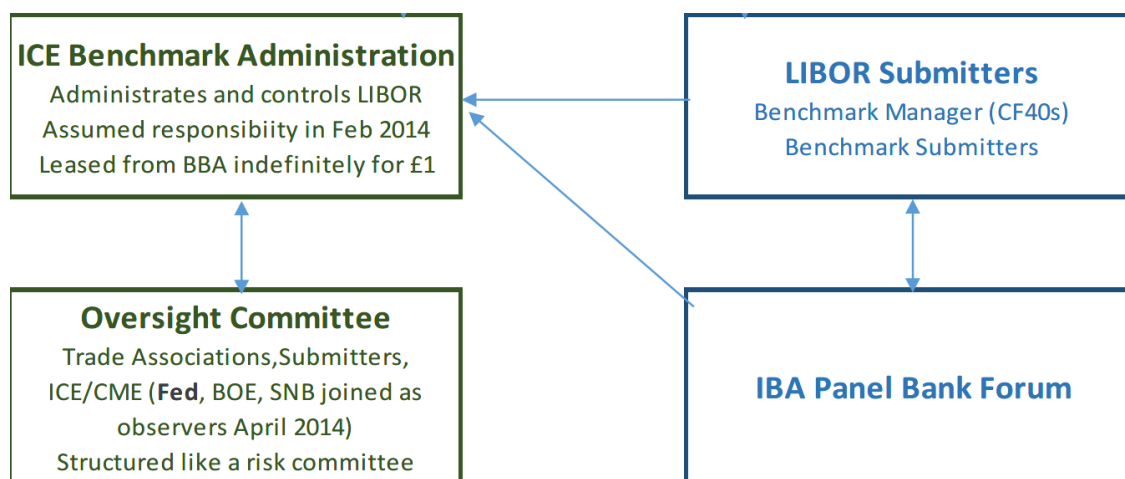
BANK	EXECUTIVE
Bank of America	Paul Scurfield
Barclays	Ian Montgomery
Barclays	Brian Rozen* ²¹⁰
BNP Paribas	Bob Hawley
Citigroup	Brian Leach
Citigroup	Heraclio Rojas
Credit Suisse	Guy Kearsley
Deutsche Bank	Adrian Munday*
Deutsche Bank	Rich Herman
HSBC	Christophe Rivoire
HSBC	Gregory Pierce
JPMorgan Chase	Matt Zames
JPMorgan Chase	Sandie O'Connor
JPMorgan Chase	Terry Belton
RBS	Graham Broyd
RBS	David Wagner
Societe Generale	Francois Barthelemy
Societe Generale	Jeff Rosen*
UBS	Dan Park

²¹⁰ *Indicates participation by phone via interstate wires or wireless spectrum rather than in-person in New York.

BANK	EXECUTIVE
UBS	Kevin Arnold*

522. On **January 22, 2015** the ARRC held a meeting from 3:00-5:00 p.m. in Room 1103 at 270 Park Avenue, 11th Floor, New York, New York. Although under its published timeline the ARRC was scheduled to deliver a “detailed work plan” by January 2015, it did not do so by the date of this meeting.

523. Meeting materials reveal that an “IBA Panel Bank Forum” had direct contact with both ICE, the administrator, and all of the USD ICE LIBOR submitters themselves, as well as their managers:



524. The materials also observed that LIBOR “does not reflect current funding patterns.” The minutes do not indicate that any member of the committee objected to that observation. This, once again, is an admission by silence. As to USD ICE LIBOR in particular, ICE was said to be considering whether or not a “fully-transaction based rate is feasible and advisable.”

525. The Chair requested that an update on USD ICE LIBOR be given at every meeting. In essence, this meant that the Panel Bank Defendants on the ARRC had an additional direct line into the ICE LIBOR Oversight Committee meetings via their ARRC meetings in New York.

526. The following representatives of Defendants participated in the January 22, 2015 meeting either in person or by phone:

BANK	EXECUTIVE
Bank of America	Paul Scurfield
Barclays	Matt Besgen
BNP Paribas	Adrian Averre
Citigroup	Brian Leach
Citigroup	Steve Compton*
Citigroup	Heraclio Rojas
Credit Suisse	Shane O'Cuinn*
Deutsche Bank	Rich Herman
Deutsche Bank	Adrian Munday*
HSBC	Gregory Pierce*
HSBC	Pieter van Vredenburg*
JPMorgan Chase	Sandie O'Connor
JPMorgan Chase	Terry Belton
RBS	Graham Broyd*
RBS	David Wagner
Societe Generale	Francois Barthelemy
Societe Generale	Sylvain Cartier
UBS	Dan Park
UBS	Kevin Arnold

527. The ARRC held six additional closed-door meetings on **February 19, 2015, April 2, 2015, May 26, 2015, June 11, 2015, July 17, 2015, and September 29, 2015** at 270 Park Avenue, New York, New York.

528. Although the ARRC was scheduled: (1) to have delivered a detailed work plan by January 2015, (2) to have actually identified alternative reference rates to LIBOR by March 2015, (3) to have delivered a plan to make contracts more robust by May 2015, (4) to have developed an adoption plan for the alternatives to LIBOR and begun steps to actually implement the alternative rates adopted by June 2015, and (5) to begin implementation of ICE LIBOR's replacement by September 2015, it did not do any of these things. To the contrary, the Committee was still in the midst of forming multiple working groups and subcommittees and remained in preliminary discussions and planning. Instead of being complete by September 2015, as had been scheduled, Defendants succeeded in putting off all of the tasks they were supposed to accomplish by that time.

529. USD ICE LIBOR, however, was a regular topic of discussion. For example, minutes of the July 2015 meeting reflect that “[s]ome ARRC members felt that the anticipated USD enhancements may not be sufficient to produce a robust term reference rate incorporating credit risk.” There is no indication that any action was planned or taken by the ARRC or ICE or any Panel Bank Defendants to deal with the concerns expressed.

530. After the September 2015 deadline came and went, the members of the ARRC continued to meet with each other. ARRC meetings were held on **October 22, 2015, December 3, 2015, January 28, 2016, February 25, 2016, and April 14, 2016**, at 270 Park Avenue and elsewhere in New York, New York.

531. The October 2015 minutes reflect that various working groups presented various plans and it was proposed that an outline of a “progress report” be prepared, although little to no progress had been made on the five key tasks the ARRC was supposed to have completed by September 2015. Unsurprisingly, given the lack of progress to date, in response to the proposal, “ARRC members had no comments.”

532. By the April 2016 meeting, the first draft of a so-called “progress report” had been circulated to members, and the committee agreed that new reference rates should be adopted, but only on what they called a “paced transition plan,” despite the fact they were more than a year behind schedule.

533. On **May 19, 2016**, the ARRC held a meeting from 3:00-5:00 p.m. in Room 1311 at 383 Madison Avenue, New York, New York. During this meeting the Chair asked for comments on the “final draft” of the “progress report,” also known as the “ARRC Interim Report,” which was distributed to the membership just prior to the meeting. No comments were offered and the

Committee unanimously ratified the report, which was to be published the next day. A public roundtable on the Interim Report was scheduled for June 21, 2016.

534. The following representatives of Defendants participated in the May 19, 2016 meeting either in person or by phone:

BANK	EXECUTIVE
Bank of America	Paul Scurfield
Barclays	Brian Rozen
Barclays	Matthew Besgen
BNP	Adrian Averre
BNP	Sarvesh Mehta*
Citigroup	Heraclio Rojas
Citigroup	Deirdre Dunn
Credit Suisse	Shane O'Cuinn
Deutsche Bank	Andrew Pickett
Deutsche Bank	Adam Eames
HSBC	Pieter van Vredenburg
JPMorgan Chase	Alice Wang
JPMorgan Chase	Sandra O'Connor
JPMorgan Chase	Terry Belton
RBS	David Wagner
RBS	Mark Rose
Societe Generale	Subadra Rajappa
UBS	Charles Durr
UBS	Joseph Ilardi

535. In addition, Fredrick Sturm, a member of the ICE LIBOR Oversight Committee, attended the meeting via phone.

536. On **July 28, 2016**, the ARRC held a meeting from 3:00-5:00 p.m. in Room 1103 at 270 Park Avenue, 11th Floor, New York, New York. This meeting reflected on the report released in July and recent ARRC public roundtable. At the roundtable, current Federal Reserve Chairman Powell provided opening remarks, in which he stated:

This report marks a new stage in reference rate reform. Reference benchmarks are a key part of the financial infrastructure. About \$300 trillion dollars in contracts reference LIBOR alone. But benchmarks were not given much consideration prior to the recent scandals involving attempts to manipulate them. Since then, the official sector has thought seriously about financial benchmarks, conducting a number of investigations into charges of manipulation, publishing the International Organization of Securities Commission's (IOSCO) Principles for Financial

Benchmarks and, through the Financial Stability Board (FSB), sponsoring major reform efforts of both interest rate and foreign exchange benchmarks. . . .

[T]he term money market borrowing by banks that underlies U.S. dollar LIBOR has experienced a secular decline. As a result, the majority of U.S. dollar LIBOR submissions must still rely on expert judgement, and even those submissions that are transaction-based may be based on relatively few actual trades. This calls into question whether LIBOR can ultimately satisfy IOSCO Principle 7 regarding data sufficiency, which requires that a benchmark be based on an active market. That Principle is a particularly important one, as it is difficult to ask banks to submit rates at which they believe they could borrow on a daily basis if they do not actually borrow very often.

537. There is no indication that any member of the ARRC or any Panel Bank Defendant objected to Chairman Powell's observations at or following the event. Rather, Defendants continued to publish, submit, and use USD ICE LIBOR. And the ARRC rolled along with its "paced transition plan."

538. The following representatives of Defendants participated in the July 28, 2016 meeting either in person or by phone:

BANK	EXECUTIVE
Barclays	Matthew Besgen
BNP	Adrian Averre
Citigroup	Heraclio Rojas
Credit Suisse	William Marshall
Deutsche Bank	Adam Eames*
HSBC	Pieter van Vredenburg
HSBC	William Child
JPMorgan	Vickie Alvo*
JPMorgan	Alice Wang
JPMorgan	Sandra O'Connor
JPMorgan	Thomas Hughes
RBS	Mark Rose
Societe Generale	Subadra Rajappa
UBS	Christian Rasmussen
UBS	Charles Durr

539. In addition, Fredrick Sturm, of the ICE LIBOR Oversight Committee, attended the meeting via phone.

540. On **September 23, 2016**, the ARRC held a meeting from 3:00-5:00 p.m. at 270 Park Avenue, 11th Floor, New York, New York.

541. At the top of the agenda was BNP Paribas' very recent departure from the USD ICE LIBOR Panel. BNP Paribas executives were in attendance for this discussion.

542. The following representatives of Defendants participated in the September 23, 2016 meeting either in person or by phone:

BANK	EXECUTIVE
Bank of America	Paul Scurfield
Barclays	Matthew Besgen
BNP	David Moore
BNP	Sarvesh Mehta*
Citigroup	Deirde Dunn
Citigroup	Heraclio Rojas
Credit Suisse	Shane O'Cuinn
Deutsche Bank	Adam Eames
HSBC	Pieter van Vredenburg
JPMorgan	Alice Wang
JPMorgan	Sandra O'Connor
JPMorgan	Thomas Hughes
JPMorgan	Vickie Alvo*
RBS	David Wagner
Societe Generale	Subadra Rajappa
UBS	Christian Rasmussen
UBS	Giuseppe Nuti

543. In addition, Fredrick Sturm, of the ICE LIBOR Oversight Committee, participated via phone.

544. On **December 1, 2016**, the ARRC held a meeting from 3:00-6:00 p.m. at 270 Park Avenue, 11th Floor, New York, New York. The minutes of this meeting show the Committee still way behind schedule, identifying and agreeing on "two high-level priorities for 2017," which were really supposed to be accomplished in 2015:

First, finalize their recommendation of an alternative overnight reference rate around mid-year, with input from the Advisory Group. The Chair asked that, prior to the next ARRC meeting, members identify what additional information they would need in order to choose a rate.

Second, finalize details of the paced transition strategy plan.

545. More than a year behind schedule and no urgency expressed. The slow-rolling thus would continue into 2017.

546. The following representatives of Defendants participated in the December 1, 2016 meeting either in person or by phone:

BANK	EXECUTIVE
Bank of America	Paul Scurfield
Barclays	Brian Rozen
Barclays	Matthew Besgen
BNP	David Moore
BNP	Sarvesh Mehta*
Citigroup	Deirdre Dunn
Citigroup	Heraclio Rojas
Credit Suisse	Shane O'Cuinn
Credit Suisse	William Marshall
Deutsche Bank	Adam Eames
HSBC	Pieter van Vredenburg
JPMorgan	Alice Wang
JPMorgan	Sandra O'Connor
JPMorgan	Vickie Alvo
RBS	David Wagner
Societe Generale	Subadra Rajappa
Societe Generalee	Sylvain Cartier
UBS	Christian Rasmussen
UBS	Giuseppe Nuti

547. In addition, Fredrick Sturm of the ICE LIBOR Oversight Committee attended the meeting in person.

548. The ARRC met a number of times in the first half of 2017, on **February 22, 2017, April 12, 2017, June 16, 2017, and June 22, 2017**. It was not until June, 22, 2019, that the Committee officially voted to select a new alternative reference rate to USD ICE LIBOR – *more than two years late*.

549. **ARRC Meetings (August 2017 through November 2017).** On **August 1, 2017**, the ARRC held a meeting from 2:00-4:00 p.m. at 270 Park Avenue, New York, New York. The minutes reflect a far greater urgency in proceeding than had been evident for years – no doubt because the work of the Committee would now be moving from relative obscurity to the spotlight

in the wake of the recent highly publicized announcement that ICE LIBOR was a sham rate and would be going away as early as 2021. The committee could hide no longer. The committee discussed the recent revelations and began preparations for issuing a final report and wrapping up the ARRC as it had existed since 2014.

550. The following representatives of Defendants and other banks participated in the August 1, 2017, meeting either in person or by phone:

BANK	EXECUTIVE
Bank of America	Paul Scurfield*
Bank of America	Alex van Voorhees
Barclays	Chris Leonard
BNP	Larry Bentzianov*
Citigroup	Deirdre Dunn*
Citigroup	Heraclio Rojas
Credit Suisse	Guy Kearsley*
Deutsche Bank	Adam Eames
Deutsche Bank	Kayam Rajaram
Deutsche Bank	Sam Wisnia*
HSBC	Pieter van Vredenburg
HSBC	Shirley Hapangama
JPMorgan	Emilio Jimenez*
JPMorgan	Sandra O'Connor
RBS	David Wagner*
Societe Generale	Subadra Rajappa
UBS	Christian Rasmussen

551. In addition, Fredrick Sturm of ICE LIBOR Oversight Committee attended the meeting in person.

552. On **October 31, 2017**, the ARRC held a conference call from 10:00-11:00 a.m. During this call, the upcoming public roundtable was discussed, which would feature opening remarks by Chairman Powell, and which would publicly reinforce the state of USD ICE LIBOR that the committee let fester during the Class Period.

553. Chairman Powell's opening remarks for what would be the final roundtable of the original ARRC provided in part:

I thought that I would begin by discussing the LIBOR related events that have brought us here, and then talk about the way forward.

LIBOR gained negative public attention when reports began to surface during the financial crisis that employees at some banks had attempted to manipulate the rate by altering the quotes they submitted for use in the calculation of LIBOR. A number of agencies, including the Commodity Futures Trading Commission (CFTC), the Department of Justice, and the U.K. Financial Conduct Authority (FCA), took the lead in investigating and prosecuting the cases of LIBOR manipulation that were uncovered. The Federal Reserve also joined in international efforts to strengthen LIBOR. Among other things, we joined the ICE Benchmark Administration's (IBA's) LIBOR Oversight Committee as an observer, and we also worked intensively with international authorities and IBA in developing and encouraging the reforms set out in IBA's Roadmap for LIBOR.

But at the same time, as we and other authorities collected data on the transactions underlying banks' submissions to LIBOR, we began to see that those transactions were relatively few and far between. As a result, many began to question whether LIBOR could be truly and permanently fixed. To be sure, much has been done to address the cases of attempted manipulation, and LIBOR has much stronger governance in place than it did before the crisis. The question instead was whether there were enough actual LIBOR transactions to form a stable basis for this critical rate.

Since many of the pressures around LIBOR stem from the low level of underlying transactions, let me share some data regarding activity in U.S. dollar wholesale funding markets. Today, there are 17 banks that submit quotes in support of dollar LIBOR. Some have suggested requiring more banks to submit LIBOR data, but doing so would not materially improve the situation. . . .

In our view, it would not be feasible to produce a robust, transaction-based rate constructed from the activity in wholesale unsecured funding markets. A transactions-based rate from this market would be fairly easy to manipulate given such a thin level of activity, and the rate itself would likely be quite volatile. Thus, LIBOR seems consigned to rely primarily on some form of expert judgment rather than direct transactions. . . .

554. On the call itself, "Federal Reserve staff discussed the formation of a reconstituted ARRC that would directly include bank, dealer, central counterparty, buy side, and end user representation."

555. On **November 27, 2017**, it was publicly announced that the ARRC would be reconstituted to include more institutional investors and buy side participants "in order to more

directly facilitate issues of legacy contract robustness and transition for cash products as well as derivatives.”

556. **Reconstituted ARRC (March 2018 and beyond).** On **March 7, 2018**, the ARRC was officially reconstituted to include numerous buy-side market participants and significant institutional investors. The Committee was expanded to add:

- AXA
- BlackRock
- Federal National Mortgage Association
- Federal Home Loan Mortgage Corporation
- GE Capital
- Government Finance Officers Association
- International Swaps and Derivatives Association
- MetLife
- National Association of Corporate Treasurers
- PIMCO
- TD Bank
- The Federal Home Loan Bank of New York
- The Independent Community Bankers of America
- The Loan Syndications and Trading Association
- SIFMA
- World Bank Group

557. Eventually, Sandie O’Connor of JPMorgan was replaced as Chair of the ARRC by Thomas Wipf of Morgan Stanley (not a member of the USD ICE LIBOR panel). Panel Bank Defendants would no longer have as much sway with the ARRC and its progress (or lack thereof), as they had until that time and BNP Paribas was no longer the member of the reconstituted Committee.

558. As a result, there has been a marked shift in activity and progress of the ARRC since then. Plainly, the influence of the Panel Bank Defendants on the ARRC from at least 2014 through at least mid-2017, furthered the conspiracy by allowing Defendants to slow-roll USD ICE

LIBOR reform and replacement and the ARRC process has otherwise provided the opportunity to conspire during the Class Period.

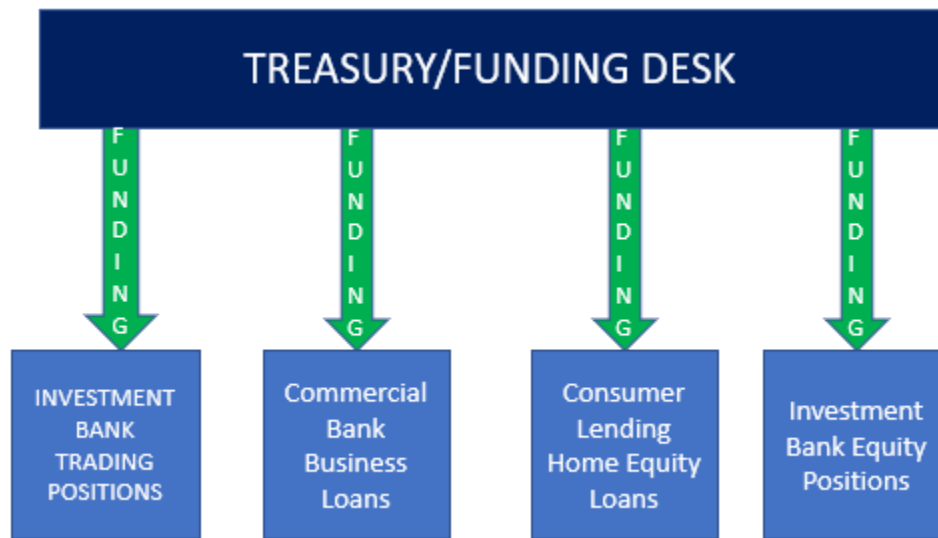
2. Additional “Plus Factors” Indicating Conspiracy

a. Motive to Conspire

559. Plaintiffs allege a profit-motivated conspiracy. The structural characteristics of the ICE LIBOR-setting process and ICE LIBOR have made profitable collusion feasible. USD ICE LIBOR was the dominant benchmark, and Defendants dominated the benchmark rate. The submissions upon which the published rates were based were 100% within the collective discretion of Defendants. As a result, Defendants had the ability to consistently move the rate as they desired – if they worked together.

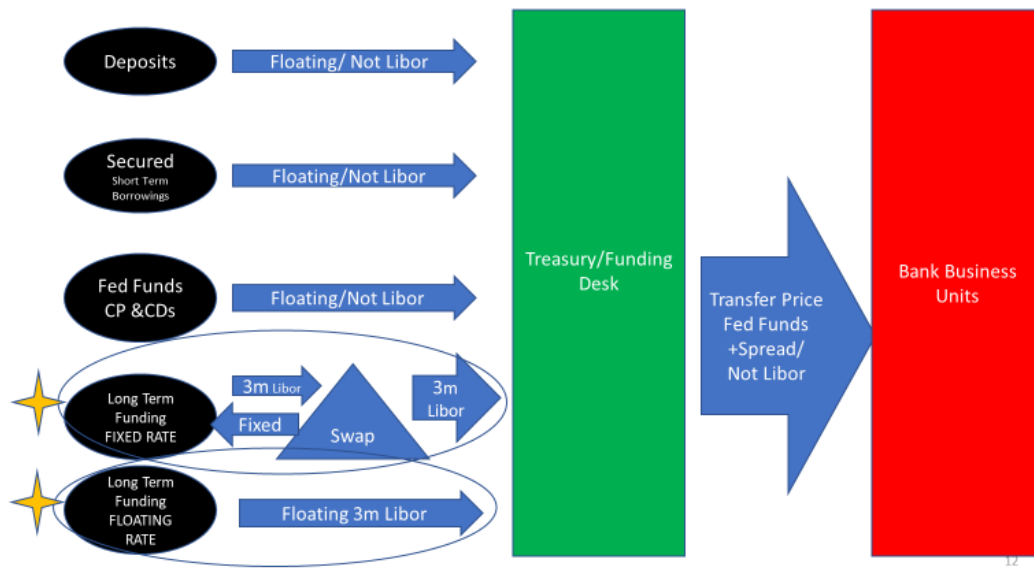
560. The conspiracy had the purpose and effect of depressing payments to members of the Class by Panel Bank Defendants on financial instruments expressly indexed to USD ICE LIBOR benchmark rates. By depressing payments to Plaintiffs and members of the Class, Panel Bank Defendants were able decrease expenditures on those instruments substantially, resulting in Panel Bank Defendants paying billions of dollars less than they should have on USD ICE LIBOR-linked floating rate instruments, at the expense of Plaintiffs and members of the Class.

561. Motive to depress USD ICE LIBOR can be found in Panel Bank Defendants’ treasury departments. The treasury department is the beating heart of any banking organization; it impacts every other aspect of the firm’s operations. Within the treasury department reside funding desks that cover different currencies, such as U.S. dollar funding. Funding desks directly impact all other divisions:

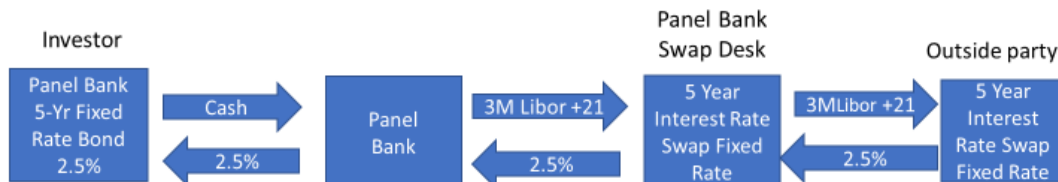


562. The ICE LIBOR Code of Conduct placed responsibility for USD LIBOR submissions with the Panel Bank Defendants' respective U.S. dollar funding desks; most, if not all, of which are located in the United States, often in New York City. At the least the following Panel Bank Defendants' U.S. dollar funding desks were located in New York City during the Class Period: Barclays, BNP Paribas, Citibank, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, MUFG, Rabobank, and RBC.

563. Funding desks, including those of the Panel Bank Defendants, have liabilities and assets. Their liabilities are the funds they borrow externally on a secured or unsecured basis for the firm, while the majority of assets are the daily loans the desk makes to all of the organization's other divisions.



564. To manage risk, the funding desk must adhere to risk limits on asset and liability duration mismatches. The daily loans that the funding desks make to the other divisions are short-term. Prudent liability management calls for a blend of short and long-term borrowings. Long-term borrowings can either be fixed rate or floating rate. To eliminate the mismatch that is created when long-term fixed rate debt is issued, and to comply with risk limits, funding desks swap long-term fixed rate borrowings to floating rate with interest rate swaps expressly indexed to USD ICE LIBOR. This results in the funding desk consistently being a net payer of USD ICE LIBOR.



565. For example, in 2016, Bank of America reported that by swapping fixed-rate liabilities for USD ICE LIBOR liabilities, the firm was able to earn more than \$2 billion dollars over and above what it would otherwise have earned.

566. Moreover, the conversion by bank funding desks of fixed rate liabilities to floating rate liabilities with interest rate swaps is the second greatest source of funding for banking organizations next to deposits. Funding desks are profit centers and have their own profit and loss statements (“P&Ls”), just like any other profit center in the firm. Those P&Ls are used to determine the compensation of bank employees in the treasury department, including bonus compensation. Because funding desk personnel are compensated based on the funding desk’s earning performance, they have strong incentives to maximize their profit.

567. Since the funding desk is consistently a net payer of USD ICE LIBOR, lower submissions that result in lower rates directly increase the profitability of the funding desk – and the bonuses of those who control and set USD ICE LIBOR submissions.

568. Additionally, most firms’ organizational structures have the funding desk reporting to the bank treasurer, who in turn reports to the Chief Financial Officer (“CFO”). Within the CFO’s purview lies the bank’s internal audit and product control. These are the groups within the bank that are responsible for policing abuse of the USD ICE LIBOR submission process.

569. Each Panel Bank Defendant’s funding desk’s USD ICE LIBOR-indexed liabilities significantly outweighed their USD ICE LIBOR-based assets on a daily basis. Consequently, the treasury departments would each consistently benefit each day at the expense of investors from depressed USD ICE LIBOR submissions.

570. Thus, while other divisions remained largely indifferent due to how banking organizations actually operate, the treasury department of each Panel Bank Defendant was highly motivated to suppress USD ICE LIBOR.

571. ICE too was motivated by profit to conspire with the banks. It was a willing partner with the Panel Bank Defendants in corrupting the process. If it came clean, there might have been

no benchmark for it to administer. First, ICE earns significant and growing revenues from licensing USD ICE LIBOR and other financial benchmarks. Second, benchmark administration is part of ICE's Data Services division, which ICE identifies as a significant component of its business. As "exchanges are increasingly dependent on revenues from market data and associated services," ICE has dramatically expanded its data services in recent years, and it is now the third leading financial services data vendor behind only Bloomberg and Reuters.²¹¹

572. ICE's CEO, Jeff Sprecher has told investors from early on that being a benchmark administrator is:

"a real opportunity. It's kind of a third leg to the stool of trading, clearing, and data . . . and so it gives us a front end that we can take our product to our customers with So, it's a big opportunity for us, no question, and it's one we're focused on."²¹²

573. ICE's CFO, Scott Hill echoed this sentiment:

I really think there's an opportunity around data. And I think it's the data that we generate off the trading on our commodities exchanges or our derivatives exchanges and I think it's the ICE Benchmark Administration. I think that's an area where you're seeing us make explicit investments, because we think that's an area where there's a lot of growth opportunity as you move forward.²¹³

574. As ICE acknowledged in its Annual Report filed with the SEC:

Any failures or negative publicity resulting from our administration of LIBOR or other benchmarks could result in a loss of confidence in the administration of these benchmarks and could harm our business and our reputation.

The elimination of LIBOR or any other changes or reforms to the determination or supervision of LIBOR could have an adverse impact on our business, financial condition and operating results.²¹⁴

²¹¹ Max Bowie, *The ICE Storm: Intercontinental Exchange's Lynn Martin*, WATERS TECHNOLOGY (Sept. 25, 2017), <https://bit.ly/2Nh3gsJ> [hereinafter *The ICE Storm*].

²¹² Jeff Sprecher, Founder, Chairman, and CEO of ICE, Intercontinental Exchange Inc. at Goldman Sachs Financial Services Conference – Final Transcript, FD (Fair Disclosure) Wire (December 10, 2014).

²¹³ Statement of Scott Hill, CFO, Intercontinental Exchange Inc. at KBW Securities Brokerage & Market Structure Conference – Final Transcript, FD (Fair Disclosure) Wire (Nov. 19, 2014).

²¹⁴ Intercontinental Exchange, Inc., Annual Report at 29 (Form 10-K) (Feb. 7, 2018).

575. ICE thus aided the Panel Bank Defendants by furthering the conspiracy in order to profit from ICE LIBOR in the U.S. Since taking over as administrator of LIBOR, “Intercontinental Exchange has . . . raised the profile of its data business significantly,” and the expansion has taken place in this District: “Lynn Martin, head of ICE Data Services . . . seems modest – embarrassed, even – about the size of her office, a large corner unit with city views in the old Interactive Data offices at 100 Church Street in lower Manhattan, a stone’s throw north of the World Trade Center.”²¹⁵

b. Interfirm Communications and Opportunity to Conspire

576. In addition to the ARRC, there were numerous opportunities for all Panel Bank Defendants to conspire. As a group effort by horizontal competitors, the ICE LIBOR-setting process itself provided an inherent opportunity. Associations of horizontal competitors are rife with opportunity for collusion, particularly where is a central vehicle through which all others communicate. As ICE’s CEO, Jeff Sprecher told investors in 2014:

We bought the LIBOR index, and we took over the administration of creating LIBOR. *So, we’re at the heart now of the day-to-day conversations with the industry, particularly the large banks, on the interest rate environment.*²¹⁶

577. Mr. Sprecher would go on tell investors that administering ICE LIBOR provides them “*[h]ourly contact with people talking about where the markets are moving, and they impart domain knowledge to us, and give us insight into where our customers are thinking.*”²¹⁷

²¹⁵ The ICE Storm, *supra*.

²¹⁶ Jeff Sprecher, Dec. 10, 2014 Final Transcript, *supra*.

²¹⁷ Statement of ICE CEO Jeff Sprecher, Q1 2014 Intercontinental Exchange, Inc. Earnings Conference Call – Final Transcript, FD (Fair Disclosure) Wire (May 8, 2014).

578. Moreover, opportunity was provided during meetings between and among Defendants in “Panel Bank Forums,” as well as official and unofficial industry groups and otherwise.

579. During the Class Period, ICE hosted “a regular Panel Bank Forum” for the Panel Bank Defendants to “discuss a range of topics” and “any agenda items requested by Benchmark Submitters.”²¹⁸ These meetings were in addition to so-called “bilateral” meetings and communications between ICE and each of the Panel Bank Defendants. The nature of the polling process meant that ICE and each of the panel banks communicated at least daily, if more. Moreover, the Panel Bank Defendants constituted the leadership of numerous financial industry groups, including organizations dealing specifically with ICE LIBOR and financial products expressly indexed to ICE LIBOR, during which they would have engaged in countless interfirm communications.

580. For instance, the Panel Bank Defendants occupy numerous positions on the Board of Directors and important committees of ISDA, which is the industry group that ultimately controls how the definition of USD ICE LIBOR is documented in financial instruments, such as interest rate swaps and floating rate notes.

581. The Panel Bank Defendants also regularly meet in less “official” capacities, including in annual meetings of in-house counsel in various locations ranging from Versailles to Litchfield County, Connecticut, where benchmark manipulation cases have been high on the agenda for discussion, as first reported on by Bloomberg in 2016.²¹⁹

²¹⁸ ICE, Policy Composition of ICE LIBOR Currency Panels, *supra*.

²¹⁹ Greg Farrell & Keri Geiger, *Inside the Secret Society of Wall Street’s Top In-House Lawyers*, BLOOMBERG (Oct. 14, 2016), <https://bloom.bg/2dhPKhq>.

c. Government Investigations

582. Numerous government agencies – many leaders and other officials of which are quoted herein – have been investigating USD ICE LIBOR, recognized many of its problems, and are involved in attempts to reform or replace it. Agencies investigating USD ICE LIBOR include: United States Commodities and Futures Trade Commission; United States Bureau of Consumer Financial Protection; United States Securities and Exchange Commission; United States Department of the Treasury; United States Office of Comptroller of the Currency; United States Office of Financial Research; the Board of Governors of the Federal Reserve System; and the Federal Reserve Bank of New York, among others.

d. Actions Against Unilateral Self-Interest

583. Due to the nature of the ICE LIBOR fixing process, a single depressed submission would have had only a negligible impact on the overall USD ICE LIBOR benchmark. The incentive for each of the Panel Bank Defendants to depress their individual submissions unilaterally, therefore, is weak, at best. In fact, since the final published rate was an average of 16 to 18 Panel Bank Defendants' submissions, with the top and bottom four excluded, it would often times be futile for one bank to make artificial submissions in hopes of unilaterally manipulating USD ICE LIBOR. On the other hand, a coordinated effort by all Panel Bank Defendants to make depressed submissions has a certain, and substantial, effect on the USD ICE LIBOR, and hence on the Panel Bank Defendants' profits.

584. Moreover, unilateral attempts at manipulation meant the possibility of detection, while there was safety in numbers by staying together and using the public rate-setting process to facilitate collusive manipulation. Having paid billions in criminal fines, civil penalties, and civil settlements in connection with the prior LIBOR scandal, and other past and ongoing benchmark manipulation cases, and associated increased regulatory scrutiny, it would have been riskier for

Panel Bank Defendants to attempt to unilaterally manipulate than collusively depress USD ICE LIBOR. Here, many Defendants have been operating under plea agreements and other government settlements that identify benchmark manipulation as an act that would violate the terms of such agreements, meaning that getting caught here would be doubly worse, so safety in numbers was paramount.

e. No Natural Reaction to Common Stimuli

585. Since Defendants' submissions were artificial, as demonstrated by their failure of the Benford Tests, it simply cannot be that their parallelism happened to reflect the Panel Bank Defendants, all reacting legitimately to natural market forces in the same way for years. Antitrust law calls for more than mere parallel conduct to infer conspiracy since sometimes parallel behavior is a *natural reaction* to common stimuli. Here, however, not only were each of the Panel Bank Defendants' daily submissions depressed in parallel, they were – *with greater than 99% certainty* – manufactured.

586. Taken together with their corruption of the joint rate-setting process, corruption of the reform process, and the plus factors articulated above – motive, opportunity, and actions against unilateral self-interest – the violation of Benford's Law shows that the Panel Bank Defendants' parallel misconduct did not result from chance, coincidence, independent responses to common stimuli, or mere interdependence unaided by an advanced understanding among the parties; rather, it shows submissions resulting from collusion. This is especially so in light of Panel Bank Defendants' long record of manipulating financial benchmarks.

f. Recidivism: The Panel Bank Defendants Have Previously Engaged in Similar Benchmark Price-Fixing

587. Another plus factor indicating collusion is the Panel Bank Defendants' history of antitrust violations, including not only rigging BBA LIBOR prior to ICE taking over as

administrator, as well as other “IBOR” rates in the past, but also rigging other globally significant financial benchmarks with which they have been entrusted, including the daily WM-Reuters FX foreign currency exchange benchmark fixing, the ISDAfix swap rate fixing, as well as the Silver and Gold daily fixings. Panel Bank Defendants have paid billions collectively in criminal fines and civil penalties to U.S. and global enforcers, as well as to resolve civil cases brought by investors stemming from government investigations of these and other schemes to manipulate systemically important financial products and markets during the past decade. Some have even pled guilty to federal crimes.

588. Numerous government entities – including, but not limited to the United States Department of Justice (the “DOJ”), the United States Board of Governors of the Federal Reserve System (the “Federal Reserve”), the United States Commodity Futures Trading Commission (the “CFTC”), the New York State Department of Financial Services (the “DFS”), the United Kingdom Financial Conduct Authority (the “FCA”), the European Commission (the “EC”), the United Kingdom Serious Fraud Office (the “SFO”), and the Administrative Council for Economic Defense (the “CADE”) – have investigated Defendants for manipulating various financial benchmarks.

589. Since 2000, Defendants Deutsche Bank, UBS, Barclays, Royal Bank of Scotland, Rabobank, Citigroup, Societe Generale, JPMorgan Chase, HSBC, and Lloyds have collectively paid more than \$8.3 billion in fines and penalties for their roles in interest rate benchmark manipulation.²²⁰ On top of the billions of dollars in fines and penalties, Defendants have also paid billions to resolve civil complaints brought by investors complaining of such illegal conduct.

²²⁰ Good Jobs First, *Violation Tracker Summary for Primary Offense Type*, <https://bit.ly/2ZwNV8D> (last visited June 26, 2019).

590. Defendants' prior benchmark manipulation schemes share similar structural characteristics with their manipulation of USD ICE LIBOR. Like USD ICE LIBOR, for example, several other benchmarks manipulated by Defendants were calculated through trimmed averages of submissions by a panel of nominally independent banks. Their extensive experience in corrupting those similar rate-setting processes provided Defendants with a blueprint for rigging USD ICE LIBOR.

591. Almost all of the Defendants have pled guilty to criminal charges related to benchmark-rigging, including criminal charges brought by the federal government.

592. Evidence recovered from government investigations into related benchmark manipulation schemes, combined with the admissions by many of the Defendants in this case of previously colluding with other Defendants suggests that the manipulation of USD ICE LIBOR alleged herein was the product of collusion.

593. Public details of each Defendant's involvement in prior schemes, and the violations and penalties imposed upon them by government regulators, are as follows:

594. **Bank of America Defendants** have been publicly investigated by both the Federal Reserve²²¹ and the CFTC²²² regarding their role in the collusive benchmark manipulation.

595. Bank of America Defendants have settled many of those investigations. Certain of

²²¹ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended at 10, *In the Matter of Bank of America Corp., Charlotte, N.C.*, Nos. 15-010-B-HC and 15-010-CMP-HC (May 20, 2015), *available at* <https://bit.ly/2Lmbygy> (consenting to imposition of various oversight mechanisms and a \$205mm civil money penalty in connection with Foreign Exchange manipulation).

²²² Order Instituting Proceedings Pursuant to Section 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the matter of: Bank of America, N.A.*, No. 18-34 (Sept. 19, 2018), *available at* <https://bit.ly/2FjbVo2> (consenting to order regarding USD ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act and imposition of civil monetary penalty of \$30mm).

those settlements included admissions by Bank of America Defendants to having engaged in the underlying conspiratorial conduct of which they were accused, and payments of hundreds of millions of dollars in fines and penalties, including a \$205mm civil penalty in connection with foreign exchange rate (the “Forex”) manipulation and a \$30mm civil penalty connected with manipulation of the ISDAfix benchmark.

596. **Citibank Defendants** have been publicly investigated by the DOJ,²²³ the CFTC,²²⁴

²²³ Plea Agreement at 2-3, *U.S. v. Citicorp* (May 20, 2015), available at <https://bit.ly/2KBvFYx> (confirming Citicorp “and its co-conspirators entered into and engaged in a combination and conspiracy to fix, stabilize, maintain, increase or decrease the price of, and rig bids and offers for, the euro/U.S. dollar (“EUR/USD”) currency pair exchanged in the foreign currency exchange spot market”); Information, *U.S. v. Citicorp*, No. 3:15-cr-00078 (May 20, 2015), <https://bit.ly/31Y7AQP> (detailing criminal charges filed regarding EUR/USD FX Spot Market manipulation); *Id.* Judgment in a Criminal Case, available at <https://bit.ly/2RFJ2Yb> (ordering probation and criminal monetary penalties).

²²⁴ Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Finding, and Imposing Remedial Sanctions, *In the Matter of: Citibank, N.A.*, No. 15-03 (Nov. 11, 2014), available at <https://bit.ly/2MWmEv2> (consenting to order regarding EUR/USD Foreign Exchange manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$310mm civil monetary penalty); *Id.* May 25, 2016 Order Institution Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, making Findings, and Imposing Remedial Sanctions, available at <https://bit.ly/2Rlaqup> (consenting to order regarding USD ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$250mm civil monetary penalty); Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, *In the Matter of: Citibank, N.A., Citibank Japan Ltd. and Citigroup Global Markets Japan Inc.*, No. 16-17 (May 25, 2016), available at <https://bit.ly/2Xr5ycu> (consenting to order regarding Yen BBA LIBOR and Euroyen TIBOR manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$175mm civil monetary penalty).

the Federal Reserve,²²⁵ the EC,²²⁶ the CADE,²²⁷ and the FCA²²⁸ regarding collusive benchmark manipulation.

597. Certain of those investigations have led, non-exhaustively, to settlements in which Citibank Defendants admitted to having conspired with others to manipulate financial benchmarks, agreed to pay over one billion dollars in fines, and accepted implementation of various oversight mechanisms including probation, among other penalties. On May 25, 2016, for example, the CFTC issued an order filing and settling charges with Citibank and certain affiliates related to “the false reporting of U.S. Dollar [BBA] LIBOR,” and ordered Citibank to pay a penalty of \$175mm.

598. **JPMorgan Defendants** have been publicly investigated by the DOJ,²²⁹ the

²²⁵ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, *In the Matter of Citigroup Inc.*, Nos. 15-008-B-HC and 15-008-CMP-HC (May 20, 2015), *available at* <https://bit.ly/2Kpu2ge> (consenting to imposition of various oversight mechanisms and a \$342mm civil monetary penalty in connection with Foreign Exchange manipulation).

²²⁶ Commission Decision, Case AT.39861-Yen Interest Rate Derivatives (April 12, 2013), *available at* <https://bit.ly/2WNYGBB> (making findings and imposing fines regarding Yen BBA LIBOR and Euroyen TIBOR manipulation) [hereinafter *Commission Decision, No. AT.39861-Yen*]; European Commission, *Antitrust: commission fines Barclays, RBS, Citigroup, JPMorgan and MUFG €1.07 billion for participating in foreign exchange spot trading cartel* (May 16, 2019), *available at* <https://bit.ly/2WNgNII> (noticing fines regarding Foreign Exchange manipulation as to Euro, British Pound, Japanese Yen, Swiss Franc, US, Canadian, New Zealand and Australian dollars, and Danish, Swedish and Norwegian crowns) [hereinafter *EC May 16, 2019 Press Release*].

²²⁷ Assessoria de Comunicacao, *CADE signs three agreements regarding a cartel investigation in the foreign exchange market* (June 15, 2018), <https://bit.ly/2XiEw8d> (noticing cease and desist agreement and \$42.9 million BRL fine collected regarding Foreign Exchange manipulation involving the Brazilian Real and other offshore currencies) [hereinafter *Assessoria de Comunicacao*].

²²⁸ Final Notice, No. 124704 (Nov. 11, 2014), *available at* <https://bit.ly/2wBnUX7> (evidencing investigation and imposing a financial penalty of £225,575,000 regarding Foreign Exchange manipulation).

²²⁹ Plea Agreement, *U.S. v. JPMorgan Chase & Co.* (May 20, 2015), *available at* <https://bit.ly/2x5x0xK> (confirming JPMorgan Chase & Co. “and its co-conspirators entered into and engaged in a combination and conspiracy to fix, stabilize, maintain, increase or decrease the price of, and rig bids and offers for, the euro/U.S. dollar (“EUR/USD”) currency pair exchanged in the foreign currency exchange spot market”, \$550mm criminal fine, and probation); Information, *U.S. v. JPMorgan Chase & Co.*, No. 3:15-cr-00079 (D. Conn. May 20, 2015), *available at* <https://bit.ly/2FkLRJk> (detailing criminal charges filed regarding EUR/USD FX Spot Market manipulation); *Id.* May 10, 2017, Judgment in a

CFTC,²³⁰ the Federal Reserve,²³¹ the EC,²³² the FCA,²³³ and the CADE²³⁴ for collusive benchmark manipulation.

599. As only one example, on December 4, 2013, JPMorgan was part of a seven-bank settlement with the EC which alleged that the banks had participated in a cartel to manipulate Yen BBA LIBOR from 2007 to 2010, and Euribor from 2005 through 2008. The settling banks collectively agreed to a fine of €1.7 billion (at the time, more than \$2.3 billion). The European Commission's Vice President in charge of competition policy issued a statement regarding the settlement expressing shock not only at the manipulation of the benchmarks, but also at "the collusion between banks who are supposed to be competing with each other." Three years later, JPMorgan was fined more than €337 million for colluding with other banks to manipulate Euribor.

Criminal Case, *available at* <https://www.justice.gov/criminal-fraud/file/933921/download> (ordering probation and criminal monetary penalties).

²³⁰ Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: JPMorgan Chase Bank, N.A.*, No. 15-04 (Nov. 11, 2014), *available at* <https://bit.ly/2IqF8iP> (consenting to Order regarding EUR/USD Foreign Exchange manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a civil monetary penalty of \$310mm); Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: JPMorgan Chase Bank, N.A.*, No. 18-15 (June 18, 2018), *available at* <https://bit.ly/31JHUhU> (consenting to order regarding USD ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$65mm civil monetary penalty).

²³¹ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, *In the Matter of JPMorgan Chase & Co.*, Nos. 15-009-B-HC and 15-009-CMP-HC (May 20, 2015), *available at* <https://bit.ly/2XY0fP5> (consenting to imposition of various oversight mechanisms and a \$342mm civil monetary penalty in connection with Foreign Exchange manipulation).

²³² Commission Decision, *supra*.

²³³ Final Notice, No. 124491 (Nov. 11, 2014), <https://bit.ly/2hdoJ2G> (evidencing investigation and imposing a financial penalty of £222,166,000 regarding Foreign Exchange manipulation).

²³⁴ Assessoria de Comunicacao, *supra*.

600. **Barclays Defendants** have been publicly investigated by the DOJ,²³⁵ the Federal

²³⁵ DOJ, Plea Agreement (June 26, 2012) Barclays Bank Plc., *available at* <https://bit.ly/2KIgQmS> (admitting to underlying conduct regarding BBA LIBOR and EURIBOR, consenting to \$160mm monetary penalty and various oversight mechanisms); *Id.* June 17, 2014 Amended Plea Agreement, *available at* <https://bit.ly/2L1S8NN> (regarding BBA LIBOR and EURIBOR manipulation, and consenting to imposition of various oversight mechanisms and \$160mm monetary penalty); Information, *U. S. v. Barclays PLC*, No. 3:15-cr-00077 (May 20, 2015), *available at* <https://bit.ly/2WQ8Uq0> (detailing criminal charges filed regarding EUR/USD FX Spot Market manipulation); *Id.* May 20, 2015 Plea Agreement, *available at* <https://bit.ly/2XbFGIA> (confirming Citicorp “and its co-conspirators entered into and engaged in a combination and conspiracy to fix, stabilize, maintain, increase or decrease the price of, and rig bids and offers for, the euro/U.S. dollar (“EUR/USD”) currency pair exchanged in the foreign currency exchange spot market”, imposition criminal fine of \$650mm and probation); *Id.* Jan. 10, 2017 Judgment in a Criminal Case, *available at* <https://bit.ly/2RE215j> (ordering probation and criminal monetary penalties).

Reserve,²³⁶ the CFTC,²³⁷ the DFS,²³⁸ the FCA,²³⁹ the SFO,²⁴⁰ the EC,²⁴¹ and the CADE²⁴² for collusive benchmark manipulation. Those benchmarks include various currencies of BBA

²³⁶ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, *In the Matter of Barclays Bank Plc, London England, and Barclays bank Plc, N.Y. Branch*, Nos. 15-006-B-FB, 15-006-B-FBR, 15-006-CMP-FB (May 20, 2015), available at <https://bit.ly/2Rs5jc2> (consenting to imposition of various oversight mechanisms and a \$342mm civil monetary penalty in connection with Foreign Exchange manipulation); Order of Prohibition Issued Upon Consent Pursuant to Section 8(e) of the Federal Deposit Insurance Act, as Amended, *In the Matter of: Gardiner, a Former Institution Affiliated Party of UBS AG, Zurich Switzerland, and a Former Institution-Affiliated Party of Barclays Bank Plc*, Nos. 16-010-E-I and 16-010-B-I (July 19, 2016), available at <https://bit.ly/2XZYh0j> (documenting probation regarding Foreign Exchange manipulation).

²³⁷ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, As Amended, Making Findings and Imposing Remedial Sanctions, *In the Matter of: Barclays Plc, Barclays Bank Plc and Barclays Capital Inc.*, No. 12-25 (June 27, 2012), available at <https://bit.ly/2WT3xlg> (consenting to order regarding USD, Sterling, Euro, and Yen manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a civil monetary penalty of \$200mm); *Id.* May 20, 2015 Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, available at <https://bit.ly/31HCX25> (consenting to order regarding USD ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$115mm civil monetary penalty); Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: Barclays Bank Plc*, No. 15-24 (May 20, 2015), available at <https://bit.ly/2IVUAm1>.

²³⁸ Consent Order Under New York Banking Law §§44 and 44-a, *In the Matter of Barclays Bank Plc and Barclays Bank Plc, N.Y. Branch*, (May 19, 2015), available at <https://on.ny.gov/31JP5ja> (consenting to Order regarding Foreign Exchange manipulation, imposition of \$485mm civil monetary penalty, and various oversight mechanisms).

²³⁹ Final Notice, No. 122702 (May 23, 2014), available at <https://bit.ly/2WRrlpm> (evidencing investigation and imposing a financial penalty of £26,033,500 regarding Gold Fixing manipulation); Final Notice, No.DJP01169 (May 24, 2014), available at <https://bit.ly/2Kr3Stw> (evidencing investigation and imposing a financial penalty of £95,600 against Barclays director regarding gold fixing manipulation); Final Notice, No. 122702 (May 20, 2015), available at <https://bit.ly/2WSjSqn> (evidencing investigation and imposing a financial penalty of £284,432,000 regarding Foreign Exchange manipulation).

²⁴⁰ The SFO, *Euribor* (Nov. 30, 2015), <https://www.sfo.gov.uk/cases/euribor/> (evidencing criminal proceedings regarding EURIBOR manipulation).

²⁴¹ European Commission, *Antitrust: Commission fines Crédit Agricole, HSBC and JPMorgan Chase rate derivatives cartel* (Dec. 7, 2016), <https://bit.ly/2gSmxic> (detailing fines associated with EURIBOR manipulation) [hereinafter *EC Dec. 7, 2016 Press Release*]. See also *EC May 16, 2019 Press Release, supra*.

²⁴² Assessoria de Comunicacao, *supra*.

LIBOR.

601. On June 26, 2012, Barclays entered into a non-prosecution agreement with the Criminal Fraud Division of the DOJ relating to that manipulation of BBA LIBOR. As part of that agreement, Barclays agreed to a Statement of Facts that explains the basis of the non-prosecution agreement. In the Statement of Facts, Barclays admitted that it engaged in a deceptive course of conduct by making false and misleading submissions concerning various currencies of BBA LIBOR. Other settlements have involved Barclays admitting it had “coordinated with . . . other banks to influence the Euribor submissions of multiple banks, including Barclays, in order to affect the official published Euribor,” paying over a billion dollars in fines, and accepting implementation of special oversight mechanisms by government financial watchdogs, among other penalties.

602. **BNP Paribas Defendants** have been publicly investigated by the DOJ,²⁴³ the CFTC,²⁴⁴ and the DFS²⁴⁵ for collusive benchmark manipulation.

603. In 2017, BNP Paribas Defendants entered a Consent Order with the DFS agreeing to a \$350 million civil monetary penalty for manipulation of the Foreign Exchange benchmark, for example. The Consent Order found that BNP Paribas Defendants had engaged in collusive conduct, and that “the misconduct was engaged in by more than a dozen” BNP Paribas employees.

²⁴³ Information, *U.S. v. BNP Paribas USA, Inc.*, No. 1:18-cr-00061 (Jan. 25, 2018), *available at* <https://bit.ly/2ZA43q6> (detailing criminal charges filed regarding Foreign Exchange manipulation).

²⁴⁴ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: BNP Paribas Sec. Corp.*, No. 18-19 (Aug. 29, 2018), *available at* <https://bit.ly/2Fhq59e> (consenting to Order regarding USD ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$90mm civil monetary penalty).

²⁴⁵ Consent Order Under New York Banking Law §§39, 44, and 44-a, *In the Matter of BNP Paribas S.A. and BNP S.A., N.Y. Branch* (May 24, 2017), *available at* <https://on.ny.gov/2XXYdOQ> (consenting to order regarding Foreign Exchange manipulation, imposition of \$350mm civil monetary penalty, and various oversight mechanisms).

It was “broad; sometimes very deep; involved employees located in . . . locations across the globe; and occurred over an extended period of time.”

604. **Credit Agricole Defendants** have been publicly investigated by the European Commission²⁴⁶ for collusive benchmark manipulation. Following its investigation, on December 7, 2016, the EC determined that Credit Agricole Defendants – along with Defendants HSBC, JPMorgan, Barclays, Deutsche Bank, RBS, and Societe Generale – formed a cartel to manipulate Euribor. Credit Agricole Defendants were ordered to pay over one hundred million dollars in fines stemming from the scheme.

605. **Credit Suisse Defendants** have been publicly investigated by the DFS²⁴⁷ and the EC²⁴⁸ for collusive benchmark manipulation.

606. Among other conduct, in 2014 Credit Suisse Defendants were found by the EC to have engaged in anticompetitive manipulation of Swiss Franc BBA LIBOR and fined more than €12.5 million. Three years later, Credit Suisse Defendants entered a Consent Order with the DFS to end an investigation into manipulation of the foreign exchange benchmark. Credit Suisse Defendants admitted to “inappropriate sharing of information with other global banks which may have led to . . . manipulation of exchange rates.” For their conduct, Credit Suisse Defendants were fined \$135 million.

²⁴⁶ EC Dec. 7, 2016 Press Release, *supra*.

²⁴⁷ Consent Order Under New York Banking Law §§39, 44, and 44-a, *In the Matter of Credit Suisse AG, Credit Suisse AG, N.Y. Branch* (Nov. 13, 2017), <https://www.dfs.ny.gov/docs/about/ea/ea171113.pdf> (consenting to order regarding Foreign Exchange manipulation, imposition of \$135mm civil monetary penalty, and various oversight mechanisms).

²⁴⁸ Commission Decision, No. AT.39924-Swiss Franc Interest Rate Derivatives (Oct. 21, 2014), http://ec.europa.eu/competition/antitrust/cases/dec_docs/39924/39924_1156_3.pdf (making findings and imposing fines regarding Swiss Franc manipulation) [hereinafter *Commission Decision, No. AT.39924-Swiss Franc*].

607. **Deutsche Bank Defendants** have been publicly investigated by the DOJ,²⁴⁹ the

²⁴⁹ Deferred Prosecution Agreement, *U.S. v. Deutsche Bank AG* (April 23, 2015), available at <https://bit.ly/2IrsINb> (consenting to filing of criminal Information, imposition of \$625mm monetary penalty, and imposition of various oversight mechanisms); Information, *U.S. v. Deutsche Bank AG*, No. 3:15-cr-00061 (Apr. 23, 2015), available at <https://bit.ly/2WU5Rnu> (detailing criminal charges filed regarding BBA LIBOR manipulation); *Id.* April 23, 2015 Deferred Prosecution Agreement, available at <https://bit.ly/2NPXzgn> (consenting to filing of criminal Information, implementation of \$625mm monetary penalty and various oversight mechanisms re IBOR manipulation schemes); Information, *U.S. v. Curtler*, No. 1:15-cr-00670 (S.D.N.Y. Oct. 8, 2015), available at <https://bit.ly/2x1ST0P> (detailing criminal charges filed against Deutsche Bank trader regarding BBA LIBOR manipulation); *Id.* Oct. 22, 2015 Plea Agreement, available at <https://www.justice.gov/criminal-fraud/file/871191/download> (confirming Deutsche Bank trader participation in BBA LIBOR manipulation); Information, *U.S. v. DB Grp. Services UK Ltd*, No. 3:15-cr-00062 (Apr. 23, 2015), available at <https://bit.ly/2L1RjV5> (confirming criminal charges filed regarding USD BBA LIBOR manipulation); *Id.* Apr. 23, 2015 Plea Agreement, available at <https://bit.ly/2Xglz5h> (confirming participation in various IBOR manipulation schemes, imposition of \$150mm fine and various oversight mechanisms); Sealed Information, *U.S. v. Parietti*, No. 1:16-cr-00373 (S.D.N.Y. May 26, 2016), available at <https://www.justice.gov/criminal-fraud/file/871196/download> (detailing criminal charges filed against Deutsche Bank trader regarding BBA LIBOR manipulation); Sealed Indictment, *U.S. v. Connolly*, No. 1:16-cr-00370 (S.D.N.Y. May 31, 2016), available at <https://www.justice.gov/criminal-fraud/file/871111/download> (detailing criminal charges filed against Deutsche Bank directors regarding USD BBA LIBOR manipulation); Sentencing, *U.S. v. DB Grp. Serv.*, No. 3:15-cr-00062 (Mar. 28, 2017), <https://www.justice.gov/criminal-fraud/file/955391/download> (imposing \$150mm fine); Judgment in a Criminal Case, *U.S. v. Curtler*, No. 1:15-cr-00670 (S.D.N.Y. Apr. 10, 2019), available at <https://www.justice.gov/criminal-fraud/file/1154646/download> (ordering \$300k fine and probation against Deutsche Bank trader).

CFTC,²⁵⁰ the Federal Reserve,²⁵¹ the DFS,²⁵² the FCA,²⁵³ the EC,²⁵⁴ the SFO,²⁵⁵ and the CADE²⁵⁶ for collusive benchmark manipulation.

608. On April 23, 2015, for example, enforcement agencies from the United States, New York, and the United Kingdom publicly disclosed plea and deferred prosecution agreements in which Deutsche Bank and various of its affiliates admitted to manipulating, or were found to have manipulated, various interest-rate benchmarks. According to the CFTC, Deutsche Bank's

²⁵⁰ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, *In the Matter of: Deutsche Bank AG*, No. 15-20 (Apr. 23, 2015), <https://bit.ly/2WTAvoBO> (consenting to order regarding IBOR manipulation schemes, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a civil monetary penalty of \$800mm); Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, *In the Matter of: Deutsche Bank Sec. Inc.*, No. 18-09 (Feb. 1, 2018), <https://bit.ly/2XY0fhW> (consenting to order regarding USD ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$70mm civil monetary penalty).

²⁵¹ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, *In the Matter of Deutsche bank AG, and DB USA Corp., and Deutsche Bank AG N.Y. Branch*, Nos. 17-008-B-FB, 17-008-CMP-FB, 17-008-B-HC, 17-008-CMP-HC, 17-008-B-FBR, 17-008-CMP-FBR (Apr. 20, 2017), *available at* <https://bit.ly/2Kt6KWW> (consenting to imposition of various oversight mechanisms and a \$136,950,000 civil money penalty in connection with Foreign Exchange manipulation).

²⁵² Consent Order Under New York Banking Law §§44 and 44-a, *In the Matter of: Deutsche Bank AG and Deutsche Bank AG, N.Y. Branch* (Apr. 23, 2015), *available at* <https://on.ny.gov/2L2n4NM> (consenting to order regarding IBOR manipulation schemes, imposition of \$600mm civil monetary penalty, and various oversight mechanisms); Consent Order Under New York Banking Law §§39 and 44, *In the Matter of: Deutsche Bank AG and Deutsche Bank AG, N.Y. Branch* (June 20, 2018), *available at* <https://www.dfs.ny.gov/docs/about/ea/ea180620.pdf> (consenting to order regarding IBOR manipulations, imposition of \$205mm civil monetary penalty, and various oversight mechanisms).

²⁵³ Final Notice, No. 15008 (Apr. 23, 2015), *available at* <https://bit.ly/2RnDT6P> (evidencing investigation and imposing a financial penalty of £226,800,000 regarding Foreign Exchange manipulation).

²⁵⁴ Commission Decision, No. AT.39861-Yen, *supra*. Commission Decision, No. AT.39914 – Euro Interest Rate Derivatives (Apr. 12, 2013), http://ec.europa.eu/competition/court/2017_euribor2.pdf (making findings and imposing fines regarding EURIBOR and EONIA manipulation); *See also EC Dec. 7, 2016 Press Release, supra*.

²⁵⁵ The SFO, *Euribor* (Nov. 30, 2015), <https://www.sfo.gov.uk/cases/euribor/> (evidencing criminal proceedings regarding EURIBOR manipulation).

²⁵⁶ Assessoria de Comunicacao, *supra*.

misconduct was “systemic and pervasive.” Enforcement agencies also found that Deutsche Bank destroyed hundreds of records in an attempt to conceal its misconduct. Pursuant to those agreements, Deutsche Bank was required to pay the equivalent of approximately \$2.5 billion in fines. Indeed, Deutsche Bank directors and traders were also subject to criminal proceedings; Michael Cutler, a senior trader and USD BBA LIBOR submitter agreed to plead guilty to criminal wire fraud and conspiracy charges for manipulating USD BBA LIBOR.

609. **HSBC Defendants** have been publicly investigated by the DOJ,²⁵⁷ the CFTC,²⁵⁸ the FCA,²⁵⁹ the EC,²⁶⁰ and the CADE²⁶¹ for collusive benchmark manipulation.

610. Among other penalties for benchmark manipulation, HSBC has agreed to pay fines of \$63 million to the DOJ, \$275 million to the CFTC, and €216 million to the FCA due to its manipulation of the foreign exchange benchmark. Indeed, at least one HSBC trader, Mark Johnson, was also subject to a criminal proceeding which resulted in a guilty verdict.

²⁵⁷ Indictment, *U.S. v. Johnson*, No. 1:16-cr-00457 (E.D.N.Y. Aug. 16, 2016), <https://bit.ly/2XB5VBq> (detailing criminal charges filed against HSBC traders regarding Foreign Exchange manipulation); *Id.* Oct. 23, 2017 Verdict Sheet, *available at* <https://bit.ly/2Rzx9Dd> (detailing criminal guilty verdict against HSBC trader); Information, *U.S. v. HSBC Holdings Plc*, No. 1:18-cr-00030 (E.D.N.Y. Jan. 18, 2018), *available at* <https://www.justice.gov/opa/press-release/file/1027321/download> (detailing criminal charges filed regarding Foreign Exchange manipulation); *Id.* Jan. 18, 2018 Deferred Prosecution Agreement, *available at* <https://bit.ly/2F0s8wr> (consenting to filing of criminal Information, imposition of \$63,104,000 monetary penalty and various oversight mechanisms regarding Foreign Exchange manipulation).

²⁵⁸ Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, *In the Matter of: HSBC Bank plc*, No. 15-07 (Nov. 11, 2014), *available at* <https://bit.ly/31JSSNq> (consenting to order regarding Foreign Exchange manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$275mm civil monetary penalty).

²⁵⁹ Final Notice, No. 114216 (Nov. 11, 2014), <https://www.fca.org.uk/publication/final-notices/final-notice-hsbc.pdf> (evidencing investigation and imposing a financial penalty of £216,363,000 regarding Foreign Exchange manipulation).

²⁶⁰ EC Dec. 7, 2016 Press Release, *supra*.

²⁶¹ Assessoria de Comunicacao, *supra*.

611. **Lloyds Defendants** have been publicly investigated by the DOJ,²⁶² the CFTC,²⁶³ and the FCA²⁶⁴ for cartel conduct in the financial industry.

612. On July 28, 2014, the FCA fined Lloyds for colluding to manipulate USD, GBP, and JPY BBA LIBOR rates, as well as GBP Repo Rate.²⁶⁵ Among other things, the FCA found that Lloyds employees had communicated with other Defendants to manipulate the benchmarks. On the same day, Lloyds consented to entry of an Order Making Findings and Imposing Remedial Sanctions with the CFTC and agreed to pay a \$105 million fine and agreed with the DOJ to pay an \$86 million penalty.

613. **MUFG Defendants** have been publicly investigated by the EC for Foreign Exchange benchmark manipulation,²⁶⁶ which resulted in the EC levying a €69.75 million fine on MUFG.

614. In imposing the fine, the EC found that MUFG employees communicated commercially sensitive information regarding prices to their direct competitors.

²⁶² Deferred Prosecution Agreement, *U.S. v. Lloyds Banking Grp. Plc*, No. 3:14-cr-00165 (July 28, 2014), available at <https://www.justice.gov/criminal-fraud/file/836371/download> (consenting to filing of criminal Information, imposition of \$86mm monetary penalty and various oversight mechanisms regarding BBA LIBOR manipulation schemes).

²⁶³ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, *In the Matter of: Lloyds Banking Grp. Plc and Lloyds Bank Plc*, No. 14-18 (July 28, 2014), available at <https://bit.ly/31Hz8dg> (consenting to order regarding BBA LIBOR manipulation schemes, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$105mm civil monetary penalty).

²⁶⁴ Final Notice, Nos. 119278 and 169628 (July 28, 2014), <https://www.fca.org.uk/publication/final-notices/lloyds-bank-of-scotland.pdf> (evidencing investigation and imposing a financial penalty of £105,000,000 regarding Repo Rate and BBA LIBOR manipulation).

²⁶⁵ A “repo” is a repurchase agreeing, in which on party sells securities together with an agreement to buy the securities back at a specific later date. The difference between sale and repurchase prices effectively represents the interest charged by the original purchaser.

²⁶⁶ EC May 16, 2019 Press Release, *supra*.

615. **Norinchukin** has been publicly investigated by the New York Attorney General for manipulation of various currencies of BBA LIBOR, though no fines have yet been imposed.²⁶⁷

616. **Rabobank** has been publicly investigated by the DOJ,²⁶⁸ the CFTC,²⁶⁹ and the FCA²⁷⁰ for collusive benchmark manipulation.

²⁶⁷ James O'Toole, *9 more banks under scrutiny in Libor investigation*, CNN <https://cnnmon.ie/2ZzHAJK> (Oct. 26, 2012) (evidencing New York Attorney General investigation regarding BBA LIBOR manipulation).

²⁶⁸ Information, *U.S. v. Cooperative Centrale Raiffeisen-Boerenleenbank B.A.*, No. 3:13-cr-00200 (D. Conn. Oct. 29, 2013), *available at* <https://bit.ly/2FnaQvo> (detailing criminal charges filed regarding Yen BBA LIBOR manipulation); *Id.* Oct. 29, 2013 Deferred Prosecution Agreement, *available at* <https://bit.ly/31LfjBA> (consenting to filing of criminal Information, imposition of various oversight mechanisms, and \$325mm monetary penalty regarding BBA LIBOR and Euribor manipulation); Indictment, *U.S. v. Robson*, No. 1:14-cr-00272 (S.D.N.Y. Apr. 28, 2014), *available at* <https://bit.ly/2Y0MBKT> (detailing criminal charges filed against traders regarding BBA LIBOR manipulation); *Id.* Sept. 2, 2014 Plea Agreement, *available at* <https://bit.ly/2xahQqV> (confirming trader's participation in manipulation scheme); Superseding Indictment, *U.S. v. Allen*, No. 1:14-cr-00272 (S.D.N.Y. Oct. 16, 2014), *available at* <https://bit.ly/2IrqVSH> (detailing criminal charges filed against traders regarding BBA LIBOR manipulation); Plea Agreement, *U.S. v. Yagami*, No. 1:14-cr-00272 (S.D.N.Y. July 1, 2014), *available at* <https://bit.ly/2Xmtwpy> (confirming trader's participation in manipulation scheme); Information, *U.S. v. Stewart*, No. 1:14-cr-00272 (S.D.N.Y. Mar. 23, 2015), *available at* <https://bit.ly/2Rn9oOF> (detailing criminal charges filed against trader regarding BBA LIBOR manipulation); *Id.* Mar. 23, 2015 Plea Agreement, <https://bit.ly/2KrnmhE> (confirming trader manipulation regarding BBA LIBOR); Jury Verdict, *U.S. v. Allen*, No. 1:14-cr-00272 (S.D.N.Y. Nov. 6, 2015), *available at* <https://bit.ly/2X6Aafg> (detailing guilty verdict against trader); *Id.* Mar. 3, 2016 Amended Judgment in a Criminal Case, *available at* <https://bit.ly/2X0gedX> (ordering assessment and prison sentence against trader); Amended Judgment in a Criminal Case, *U.S. v. Conti*, No. 1:14-cr-00272 (Mar. 18, 2016), *available at* <https://bit.ly/2KrnE8e> (ordering assessment and prison sentence against trader); Plea Agreement, *U.S. v. Thompson*, No. 1:14-cr-00272 (July 14, 2016), *available at* <https://bit.ly/2IQI4pf> (confirming trader manipulation regarding BBA LIBOR); Nov. 21, 2016 Judgment in a Criminal Case, *Robson*, No. 1:14-cr-00272, *available at* <https://bit.ly/2J6kWlz> (ordering assessment and ordering probation); *Id.* Nov. 22, 2016 Judgment in a Criminal Case, *available at* <https://bit.ly/2FyTU5m> (detailing guilty plea, ordering incarceration and assessment); Judgment in a Criminal Case, *U.S. v. Stewart*, No. 1:14-cr-00272 (S.D.N.Y. Feb. 22, 2017), *available at* <https://bit.ly/2X5RRM7> (ordering probation and imposing assessment).

²⁶⁹ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act Making Findings and Imposing Remedial Sanctions, *In the Matter of Cooperatieve Centrale Raiffeisen-Boerenleenbank B.A.*, No. 14-02 (Oct. 29, 2013), *available at* <https://bit.ly/2Xmua6s> (consenting to order regarding BBA LIBOR and Euribor manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$475mm civil monetary penalty).

²⁷⁰ Final Notice, No. 171596 (Oct. 29, 2013), <https://bit.ly/2LkPO4t> (evidencing investigation and imposing a financial penalty of £105,000,000 regarding BBA LIBOR manipulation).

617. Among other penalties, Rabobank was fined \$475 million for BBA LIBOR and Euribor manipulation by the CFTC and agreed to a Deferred Prosecution Agreement with the Criminal Fraud Section of the DOJ under which Rabobank agreed to pay a \$235 million fine. As part of the agreement, Rabobank admitted that more than two-dozen employees had participated in ongoing and pervasive manipulation of financial benchmarks. At least four of those traders were later subject to criminal prosecution for their conduct, with several eventually serving time in prison.

618. **RBC Defendants** have been publicly investigated by the CADE²⁷¹ for collusive benchmark manipulation.

619. In settling that investigation into Foreign Exchange manipulation, RBC Defendants agreed to the issuance of at least one cease and desist order, admitted to engaging in the underlying conspiratorial conduct of which it was accused, paid millions of dollars in fines, and accepted implementation of various oversight mechanisms, among other penalties.

620. **RBS Defendants** have been publicly investigated by the DOJ,²⁷² the CFTC,²⁷³ the

²⁷¹ Assessoria de Comunicacao, *supra*.

²⁷² Information, *U.S. v. The Royal Bank of Scotland PLC*, No. 3:13-cr-00074 (Apr. 12, 2013), <https://bit.ly/2MWS8RO> (detailing criminal charges filed regarding BBA LIBOR manipulation); *Id.* Apr. 12, 2013 Deferred Prosecution Agreement, *available at* <https://bit.ly/2XIW5DA> (consenting to filing criminal Information, imposition of \$150mm monetary penalty and various oversight mechanisms regarding BBA LIBOR manipulation); Information, *U.S. v. RBS Sec. Japan Ltd*, No. 3:13-cr-00073 (Apr. 12, 2013), *available at* <https://bit.ly/2IoIZwR> (detailing criminal charges filed regarding BBA LIBOR manipulation); *Id.* Apr. 12, 2013 Plea Agreement, *available at* <https://bit.ly/2MWm7ZT> (pleading guilty to BBA LIBOR manipulation, consenting to imposition of \$50mm fine and various oversight mechanisms); *Id.* Jan. 13, 2014 Judgment in a Criminal Case, *available at* <https://bit.ly/2L37lOj> (ordering \$50mm fine); Information, *U.S. v. The Royal Bank of Scotland Plc*, No. 3:15-cr-00080 (May 20, 2015), *available at* <https://bit.ly/2WPPWjr> (detailing criminal charges filed regarding Foreign Exchange manipulation); *Id.* Plea Agreement, *available at* <https://bit.ly/2MYEft9> (pleading guilty to Foreign Exchange manipulation, agreeing to \$395mm criminal fine and imposition of various oversight mechanisms); *Id.* Jan. 10, 2017 Judgment in a Criminal Case, *available at* <https://bit.ly/2FzssEH> (ordering fine and probation).

²⁷³ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, *In the Matter of: The Royal Bank of Scotland Plc and*

Federal Reserve,²⁷⁴ the FCA,²⁷⁵ and the EC²⁷⁶ for violations of various American and European competition laws.

621. In a Deferred Prosecution Agreement with the Criminal Fraud Section of the DOJ, RBS admitted that it engaged in wire fraud and criminal price-fixing for participating in fraudulent and collusive practices across rate-setting benchmarks. The agreement also refers to additional, ongoing investigations by the DOJ into misconduct related to additional, unidentified benchmarks.

RBS Sec. Japan Ltd, No. 13-14 (Feb. 6, 2013), available at <https://bit.ly/2Xie5P6> (consenting to order regarding BBA LIBOR manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$325mm civil monetary penalty); Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: The Royal Bank of Scotland plc*, No. 15-05 (Nov. 11, 2014), available at <https://bit.ly/2RrXiDY> (consenting to order regarding Foreign Exchange manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$290mm civil monetary penalty); Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: The Royal Bank of Scotland Plc*, No. 17-08 (Feb. 3, 2017), available at <https://bit.ly/2J6Sss3> (consenting to order regarding ISDAFIX manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$85mm civil monetary penalty).

²⁷⁴ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, *In the Matter of The Royal Bank of Scotland PLC and RBS Sec. Inc.*, Nos. 15-007-B-FB and 15-007-CMP-FB (May 20, 2015), available at <https://bit.ly/31EqKvb> (consenting to imposition of various oversight mechanisms and a \$274mm civil money penalty in connection with Foreign Exchange manipulation).

²⁷⁵ Final Notice, No. 121882 (Feb. 6, 2013), <https://www.fca.org.uk/publication/final-notice/rbs.pdf> (evidencing investigation and imposing a financial penalty of £87,500,000 regarding BBA LIBOR manipulation); Final Notice, Nos. 119278 and 169628 (July 28, 2014), <https://bit.ly/2WNGYyp> (evidencing investigation and imposing a financial penalty of £105,000,000 regarding Repo Rate and BBA LIBOR manipulation); Final Notice, No. 121882 (Nov. 11, 2014), <https://bit.ly/2ykpyhJ> (evidencing investigation and imposing a financial penalty of £217,000,000 regarding Foreign Exchange manipulation).

²⁷⁶ *Commission Decision, No. AT.39861-Yen*, *supra*. Commission Decision, No. AT.39914-Euro Interest Rate Derivatives (Apr. 12, 2013), http://ec.europa.eu/competition/court/2017_euribor2.pdf (making findings and imposing fines regarding EURIBOR and EONIA manipulation); European Commission, *Antitrust: Commission settles RBS-JPMorgan cartel in derivatives based on Swiss franc LIBOR; imposes € 61.6 million fine on JPMorgan* (Oct. 21, 2014), http://europa.eu/rapid/press-release_IP-14-1189_en.htm (detailing fines associated with Swiss Franc BBA LIBOR manipulation); See Dec. 7, 2016 Press Release, *supra*. See also EC May 16, 2019 Press Release, *supra*.

RBS also agreed to pay over a billion dollars in fines stemming from benchmark manipulation.

622. **Societe Generale Defendants** have been publicly investigated by the DOJ,²⁷⁷ the FTC,²⁷⁸ the EC,²⁷⁹ and the SFO²⁸⁰ for collusive benchmark manipulation.

623. Societe Generale's settlements of those investigations have led to the payment of several hundred million dollars' worth of fines, among other penalties. Like JPMorgan Defendants, Societe Generale Defendants were part of the 2013 seven-bank €1.7 billion settlement with the EC related to manipulation of Euribor and Yen BBA LIBOR. In 2017, two Societe Generale executives, Danielle Sindzingre and Muriel Bescond, were indicted for participating in Societe Generale's submission of false and misleading USD BBA LIBOR rates.

624. **Sumitomo Defendants** have been publicly investigated and fined by the CFTC²⁸¹ for unilaterally manipulating a worldwide copper benchmark. Sumitomo Defendants paid \$150

²⁷⁷ Indictment, *U.S. v. Sindzingre*, No. cr17-464 (E.D.N.Y. Aug. 24, 2017), *available at* <https://bit.ly/2FjAXU2> (detailing criminal charges filed against submitters regarding BBA LIBOR manipulation); Deferred Prosecution Agreement, *U.S. v. Societe Generale S.A.*, No. 18-cr-253 (E.D.N.Y.), <https://bit.ly/2Fyda2Y> (consenting to filing of criminal Information, imposition of \$275mm monetary penalty and various oversight mechanisms); *Id.* Information, *available at* <https://bit.ly/2Fn6Kn7> (detailing criminal charges filed regarding BBA LIBOR manipulation).

²⁷⁸ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: Societe Generale S.A., No. 18-14* (June 4, 2018), <https://bit.ly/2Kr5lQv> (consenting to Order regarding BBA LIBOR and Euribor manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, and imposition of various oversight mechanisms and a \$475mm civil monetary penalty).

²⁷⁹ Commission Decision, No. AT.39914-Euro Interest Rate Derivatives (Apr. 12, 2013), <https://bit.ly/2ZV5IXr> (making findings and imposing fines regarding EURIBOR and EONIA manipulation); *See also* EC Dec. 7, 2017 Press Release, *supra*.

²⁸⁰ The SFO, *Euribor*, <https://www.sfo.gov.uk/cases/euribor/> (evidencing criminal proceedings regarding EURIBOR manipulation).

²⁸¹ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act and Findings and Order Imposing Remedial Sanctions, *In the Matter of Sumitomo Corp.*, *available at* <https://bit.ly/2FAcoCl> (consenting to order regarding copper price manipulation, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$125mm civil monetary penalty).

million to settle that investigation, \$125 million of which was a fine, and the other \$25 million restitution for the victims of Sumitomo's conduct.

625. **UBS Defendants** have been investigated by the DOJ,²⁸² the CFTC,²⁸³ the Federal Reserve,²⁸⁴ the FCA,²⁸⁵ and the EC²⁸⁶ for collusive benchmark manipulation.

²⁸² DOJ, UBS A.G. Plea Agreement (Dec. 18, 2012), *available at* <https://bit.ly/2KsT2mI> (consenting to implementation of \$500mm monetary penalty and various oversight mechanisms); Information, *U.S. v. UBS Sec. Japan Co., Ltd.*, No. 3:12-cr-00268 (Dec. 19, 2012), *available at* <https://bit.ly/2WMGTLc> (detailing criminal charges filed regarding BBA LIBOR manipulation); *Id.* Dec. 19, 2012 Plea Agreement, <https://bit.ly/2WT4Ght> (consenting to filing criminal Information and guilty plea, implementation of various oversight mechanisms and \$100mm fine); *Id.* Sept. 18, 2013 Judgment, *available at* <https://bit.ly/31Kxxu> (ordering \$100mm fine); Amendment to Non-Prosecution Agreement (Oct. 20, 2014), *available at* <https://bit.ly/2ISKh2d> (adding several provisions to previous agreement); Information, *U.S. v. UBS AG*, No. 3:15-cr-00076 (May 20, 2015), *available at* <https://bit.ly/2IqA7GZ> (detailing criminal charges filed regarding BBA LIBOR manipulation); *Id.* May 20, 2015 Plea Agreement, <https://bit.ly/2RFUnaH> (confirming IBOR manipulation schemes, agreeing to plead guilty to criminal Information, imposition of \$203mm fine and various oversight mechanisms); *Id.* Jan. 10, 2017 Judgment in a Criminal Case, *available at* <https://bit.ly/2ZP8Zaw> (ordering probation and \$203mm fine); Indictment, *U.S. v. Hayes*, No. 1:17-cr-00750 (S.D.N.Y. Dec. 8, 2017), *available at* <https://bit.ly/2Xy7akW> (detailing criminal charges filed against traders regarding BBA LIBOR manipulation).

²⁸³ Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act Making Findings and Imposing Remedial Sanctions, *In the Matter of: UBS AG and UBS Sec. Japan Co., Ltd.*, No. 13-09 (Dec. 19, 2012), *available at* <https://bit.ly/2IWne6x> (consenting to order regarding IBOR manipulation schemes, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$700mm civil monetary penalty); Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, *In the Matter of: UBS AG, No. 15-06* (Nov. 11, 2014), *available at* <https://bit.ly/2IUZ5xg> (consenting to order regarding IBOR manipulation schemes, including requirement to cease and desist from violating various provisions of the Commodity Exchange Act, imposition of various oversight mechanisms, and a \$290mm civil monetary penalty).

²⁸⁴ Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, *In the Matter of UBS AG, Zurich, Switzerland and UBS AG, Stamford Branch*, Nos. 15-005-B-FB, 15-005-B-FBR, 15-005-CMP-FB (May 20, 2015), <https://bit.ly/2qr7Vgi> (consenting to imposition of various oversight mechanisms and a \$342mm civil money penalty in connection with Foreign Exchange manipulation); Order of Prohibition Issued Upon Consent Pursuant to Section 8(e) of the Federal Deposit Insurance Act, as Amended, *In the Matter of Matthew Gardiner*, Nos. 16-010-E-I and 16-010-B-I (July 19, 2016), <https://bit.ly/2XZYh0j>.

²⁸⁵ Final Notice, No. 186958 (Nov. 11, 2014), <https://bit.ly/2xcDwSR> (evidencing investigation and imposing a financial penalty of £233,814,000 regarding Foreign Exchange manipulation).

²⁸⁶ Commission Decision, No. AT.39861-Yen, *supra*. Commission Decision, No. AT.39914-Euro Interest Rate Derivatives (Apr. 12, 2013), http://ec.europa.eu/competition/court/2017_euribor2.pdf (making findings and imposing fines regarding EURIBOR and EONIA manipulation); *see* Commission Decision, No. AT.39924-Swiss Franc, *supra*.

626. In connection with those investigations, UBS has entered into non-prosecution agreements and guilty pleas with the Criminal Fraud Division of the DOJ, the Swiss Financial Market Supervisory Authority, and the CFTC. Among other admissions, UBS agreed that it had engaged in collusive manipulation of Euroyen TIBOR in a non-prosecution agreement with the DOJ, and pleaded guilty to wire fraud for manipulating JPY BBA LIBOR. According to the CFTC, UBS engaged in “rampant misconduct” through dozens of employees, officers, and agents located around the world, all with the aim of undermining the integrity of various global financial benchmarks. In December 2012, two former UBS traders, Tom Hayes and Roger Darin, were charged with wire fraud, conspiracy to commit wire fraud, and violations of Section 1 of the Sherman Act in connection with UBS’s benchmark rate manipulation. Mr. Hayes was also charged by British authorities for manipulation of BBA LIBOR rates. Following his trial in London, Mr. Hayes was sentenced to fourteen years in prison, one of the longest sentences in British history for a non-violent crime (on appeal, his prison sentence was later reduced to eleven years).

G. USD ICE LIBOR Financial Instruments Under Which Class Members Directly Received Depressed Libor-Indexed Payments from Panel Bank Defendants

627. Plaintiffs bring this action on certain types of floating rate financial instruments that made payments based on interest at a rate expressly indexed to the 1-month or 3-month USD ICE LIBOR benchmark rate directly from a Panel Bank Defendant: (1) 1-month or 3-month USD ICE LIBOR Floating Rate Debt Instruments, and (2) 1-month or 3-month USD ICE LIBOR Receiver Interest Rate Swaps (collectively, “USD ICE LIBOR Financial Instruments”).

628. In both types of USD ICE LIBOR Financial Instruments, USD ICE LIBOR rates form a component of the price, in that payments by Panel Bank Defendants to members of the Class on both types of instruments are expressly indexed to a depressed 1-month or 3-month USD

ICE LIBOR rate that Panel Bank Defendants themselves collusively fixed at artificially low levels every day during the Class Period. Panel Bank Defendants directly underpaid members of the Class on USD ICE LIBOR Financial Instruments, materially and proximately causing injury and damages to members of the Class in the United States.

1. Floating-Rate Notes and Other USD ICE LIBOR-Indexed Floating Rate Debt Instruments Issued by Panel Bank Defendants under Which Investors Received Floating Rate Payments Directly from Panel Bank Defendants

629. Floating-rate notes (“FRNs”) are notes with interest rates that vary based on a benchmark rate. USD ICE LIBOR is the one of the most widely-used benchmarks in floating-rate notes, particularly those issued or sold in the United States.

630. The floating or variable rates at which investors in FRNs are paid by issuers are reset periodically, as defined in the terms of the FRNs, typically by reference to a benchmark rate and a spread. To illustrate, the issuer/obligor on a FRN might pay interest quarterly to investors at 3-month USD ICE LIBOR plus 0.5%. If 3-month USD ICE LIBOR is set at 2%, then the interest rate, or coupon, on the note would be 2.5%. If 3-month USD ICE LIBOR is set lower, at 1%, for example, then the coupon payable to the investor would be 1.5% instead of 2.5%.

631. Interest rates reset at a variety of frequencies, most commonly at monthly or quarterly intervals. FRNs are issued by both governmental entities and public corporations, such as Apple, Ford, and GM, as well as by the Panel Bank Defendants themselves.

632. In addition to FRNs, banks also issued other similar debt instruments expressly indexed to USD ICE LIBOR during the Class Period, including certificates of deposit, Yankee CDs, bank notes, senior unsecured notes, subordinated bonds, debentures, preferred stock, trust preferred securities, capital securities, hybrid securities, and covered bonds (collectively with

FRNs, when expressly linked to 1-month or 3-month USD ICE LIBOR, “USD ICE LIBOR Floating Rate Debt Instruments”).

633. During the Class Period, the Panel Bank Defendants issued hundreds of billions of dollars in floating-rate debt linked directly and expressly to USD ICE LIBOR. As obligors, the Panel Bank Defendants paid interest to investors on such debt at rates that varied with USD ICE LIBOR. The lower they set USD ICE LIBOR, the less they were obligated to pay in floating rate interest to investors, and the less floating interest rate payments investors received from the Panel Bank Defendants.

634. With hundreds of billions in their own issuances of USD ICE LIBOR Floating Rate Debt Instruments outstanding at any time during the Class Period, every basis point (*i.e.*, 0.0001) movement in USD ICE LIBOR downward would save the Panel Bank Defendants hundreds of millions in payments on such notes to investors over the Class Period. Savings on floating rate payments on interest rate swaps out of fixed rate notes were even greater than that.

635. Investors who held USD ICE LIBOR Floating Rate Debt Instruments suffered injury and damages when Defendants set 1-month or 3-month USD ICE LIBOR lower than it should have been set by directly receiving from a Panel Bank Defendant a payment based on interest at a rate expressly indexed to 1-month or 3-month USD ICE LIBOR during the Class Period.

2. USD ICE LIBOR-Indexed Interest Rate Swaps under which Counterparties Received Floating Rate Payments Directly from Panel Bank Defendants

636. An “Interest Rate Swap” is an agreement between two parties to exchange streams of interest payments for one another, over a set period of time. The vast majority of interest rate swaps are known as “vanilla” swaps that exchange fixed-rate payments for floating-rate payments based on USD ICE LIBOR.

637. Interest Rate Swaps are derivative contracts that trade Over-the-Counter (“OTC”). They are nearly always governed by the International Swaps and Derivatives Association (“ISDA”) Master Agreement and the ISDA Definitions, which define USD ICE LIBOR in accordance with the ICE LIBOR Submission Question. The Panel Bank Defendants entered into trillions of dollars in Interest Rate Swaps with U.S. counterparties during the Class Period.

638. Among other things, Interest Rate Swaps allow the Panel Bank Defendants to swap their fixed-rate liabilities, such as from fixed-rate issuances to floating-rate liabilities. As a matter of course, large banks convert significant amounts of fixed-rate liabilities into floating-rate liabilities via interest rate swaps, providing them even greater exposure to USD ICE LIBOR.

639. Interest Rate Swaps that entitle a counterparty to receive floating rate interest payments expressly based upon a 1-month or 3-month USD ICE LIBOR rate directly from a Panel Bank Defendant are referred to herein as “USD ICE LIBOR Receiver Interest Rate Swaps.”

640. Counterparties to USD ICE LIBOR Receiver Interest Rate Swaps suffered injury and damages when Defendants set 1-month or 3-month USD ICE LIBOR lower than it should have been set by directly receiving from a Panel Bank Defendant a payment based on interest at a rate expressly indexed to 1-month or 3-month USD ICE LIBOR during the Class Period.

3. Defendants’ Roles in Achieving the Purpose and Effect of the Conspiracy

641. The conspiracy had the purpose and effect of depressing payments to members of the Class by Panel Bank Defendants on USD ICE LIBOR Financial Instruments in the United States during the Class Period. Panel Bank Defendants worked together to accomplish their goal. Among other overt acts undertaken in furtherance of the conspiracy, some Panel Bank Defendants made depressed ICE LIBOR submissions to ICE that resulted in depressed USD ICE LIBOR rates. Some Panel Bank Defendants issued or otherwise directly transacted with members of the Class

in USD ICE LIBOR Financial Instruments incorporating USD ICE LIBOR in the United States. Some Panel Bank Defendants had multiple roles, as did ICE, which participated in numerous aspects of the corrupt ICE LIBOR process.

642. During the Class Period, at least the following Panel Bank Defendant entities directly underpaid members of the Class on USD ICE LIBOR Financial Instruments as an issuer or counterparty in furtherance of the conspiracy, including by making payments based on depressed USD ICE LIBOR rates directly to members of the Class in the United States, materially and proximately causing injury and damages to, and reaping ill-gotten gains directly from, members of the Class in the United States: Bank of America Corporation, Bank of America N.A., Citigroup Inc., Citibank, N.A., JPMorgan Chase & Co., JPMorgan Chase Bank, N.A., BNP Paribas S.A., Crédit Agricole S.A., Crédit Agricole Corporate and Investment Bank, Credit Suisse Group AG, Credit Suisse AG, Deutsche Bank AG, HSBC Holdings plc, HSBC Bank plc, HSBC Bank USA, N.A., Lloyds Bank plc, MUFG Bank, Ltd. (f/k/a The Bank of Tokyo-Mitsubishi UFJ Ltd.), Mitsubishi UFJ Financial Group, Inc., The Norinchukin Bank, Coöperatieve Rabobank U.A., Royal Bank of Canada, The Royal Bank of Scotland Group plc, Société Générale S.A., Sumitomo Mitsui Banking Corporation, Sumitomo Mitsui Financial Group, Inc., UBS Group AG, and UBS AG.

643. At least the following Panel Bank Defendant entities made depressed USD ICE LIBOR submissions in furtherance of the conspiracy: Bank of America N.A., Citibank, N.A., JPMorgan Chase Bank, N.A., Barclays Bank plc, BNP Paribas S.A., Crédit Agricole Corporate and Investment Bank, Credit Suisse AG, Deutsche Bank AG, HSBC Bank plc, Lloyds Bank plc, MUFG Bank, Ltd. (f/k/a Bank of Tokyo-Mitsubishi UFJ Ltd.), The Norinchukin Bank, Coöperatieve Rabobank U.A., Royal Bank of Canada, NatWest Markets (f/k/a The Royal Bank of

Scotland plc), National Westminster Bank plc, Société Générale, Sumitomo Mitsui Banking Corporation Europe Ltd., and UBS AG.

644. At least the following Panel Bank Defendant entities sold USD ICE LIBOR Financial Instruments directly to members of the Class in the United States in furtherance of the conspiracy: Merrill Lynch, Pierce, Fenner & Smith Inc., Citigroup Global Markets Inc., J.P. Morgan Securities LLC, BNP Paribas Securities Corp., Crédit Agricole Securities (USA) Inc., Credit Suisse Securities (USA) LLC, Deutsche Bank Securities Inc., HSBC Securities (USA) Inc., Lloyds Securities Inc., MUFG Securities Americas Inc., The Norinchukin Bank, Coöperatieve Rabobank U.A., RBC Capital Markets, LLC, Natwest Markets Securities Inc., SG Americas Securities, LLC, SMBC Capital Markets, Inc., and UBS Securities LLC.

V. CLASS ACTION ALLEGATIONS

645. Plaintiffs bring this action on behalf of themselves, and, under Rules 23(a) and (b) of the Federal Rules of Civil Procedure, on behalf of:

All persons or entities residing in the United States that directly transacted with a Panel Bank Defendant in a USD ICE LIBOR Financial Instrument during the Class Period by directly receiving from a Panel Bank Defendant a payment based on interest at a rate expressly indexed to a 1-month or 3-month USD ICE LIBOR benchmark rate set at any time during the Class Period, regardless of when the USD ICE LIBOR Financial Instrument was purchased.

646. “USD ICE LIBOR Financial Instrument” means an instrument that includes any term, provision, obligation or right to be paid or to receive payment based on interest at a rate expressly indexed to a 1-month or 3-month USD ICE LIBOR benchmark rate by a Panel Bank Defendant on a (1) USD ICE LIBOR Floating Rate Debt Instrument, as defined herein, or (2) USD ICE LIBOR Receiver Interest Rate Swap, as defined herein.

647. “Class Period” means the period from at least February 1, 2014, through date by which the anticompetitive effects of the conduct shall have ceased, but in any event no later than the present.²⁸⁷

648. Excluded from the Class are: Defendants, and their officers, directors, management, employees, subsidiaries, and affiliates. Also excluded is the Judge presiding over this action, his law clerks, spouse, and any person within the third degree of relationship living in the Judge’s household and the spouse of such a person.

649. Members of the Class are so numerous and geographically dispersed that joinder is impracticable. Further, members of the Class are readily identifiable from information and records in the possession of Defendants.

650. Plaintiffs’ claims are typical of the claims of the members of the Class. Plaintiffs and members of the Class were damaged by the same wrongful conduct of Defendants.

651. Plaintiffs will fairly and adequately protect and represent the interests of members of the Class. The interests of the Plaintiffs are coincident with, and not antagonistic to, those of members of the Class.

652. Plaintiffs are represented by counsel with experience in the prosecution and leadership of class action antitrust and other complex litigation, including class actions in the financial services industry, having brought successful claims against many of the same Defendants named herein.

653. Questions of law and fact common to the members of the Class predominate over questions that may affect only individual Class members, thereby making damages with respect to

²⁸⁷ Plaintiffs reserve the right to amend the Class Period prior to moving based on further investigation and discovery.

members of the Class as a whole appropriate. Questions of law and fact common to members of the Class include, but are not limited to:

- a. whether Defendants conspired to unreasonably restrain trade in violation of federal antitrust laws;
- b. the duration of the alleged conspiracy;
- c. injury suffered by Plaintiffs and members of the Class;
- d. damages suffered by Plaintiffs and members of the Class; and
- e. whether Defendants have acted or refused to act on grounds generally applicable to members of the Class, thereby making appropriate final injunctive relief or corresponding declaratory relief with respect to members of the Class as a whole.

654. Class action treatment is a superior method for the fair and efficient adjudication of the controversy. Such treatment will permit a large number of similarly situated persons to prosecute their common claims in a single forum simultaneously, efficiently and without the unnecessary duplication of evidence, effort, or expense that numerous individual actions would require.

655. The benefits of proceeding through the class mechanism, including providing injured persons or entities a method for obtaining redress on claims that could not practicably be pursued individually, substantially outweighs potential difficulties in management of this class action.

656. Plaintiffs know of no special difficulty to be encountered in the maintenance of this action that would preclude its maintenance as a class action.

657. Plaintiffs have defined members of the Class based on currently available information and hereby reserve the right to amend the definition of members of the Class, including, without limitation, the Class Period.

VI. STATUTES OF LIMITATIONS AND TOLLING

658. Plaintiffs disclaim any burden to plead facts regarding statutes of limitations.

659. By its very nature, the unlawful activity in which Defendants engaged was self-concealing. As a result of Defendants' affirmative acts, misrepresentations, and nondisclosures as alleged herein, any applicable statutes of limitation on claims asserted by Plaintiffs and members of the Class have been and are tolled, and Defendants are equitably estopped from raising statutes of limitations as a defense.

660. It was not until April 2018 that ICE revealed that the so-called "Waterfall" reforms it had trumpeted for years in published documents and otherwise were a sham and that not one bank had actually switched to the Waterfall and was still using the original Code of Conduct and Submitters Question.

661. It was not until July 2018 that the Federal Reserve publicly disclosed data reflecting its "informed estimate" as to how few "transactions" support USD ICE LIBOR submissions and rates. Indeed, the Federal Reserve explained that because ICE "does not release data on the transactions that actually underlie LIBOR, *many may not be aware of how truly thin these markets have become.*"²⁸⁸

662. Moreover, even as of November 26, 2018, the Federal Reserve Bank of New York recognized that "LIBOR is perceived to represent the average interest rate at which banks can borrow from one another."²⁸⁹

²⁸⁸ Quarles Introductory Remarks, *supra*.

²⁸⁹ Federal Reserve Bank of New York, 5 Things You Should Know About LIBOR, ARRC, and SOFR (Nov. 26, 2018).

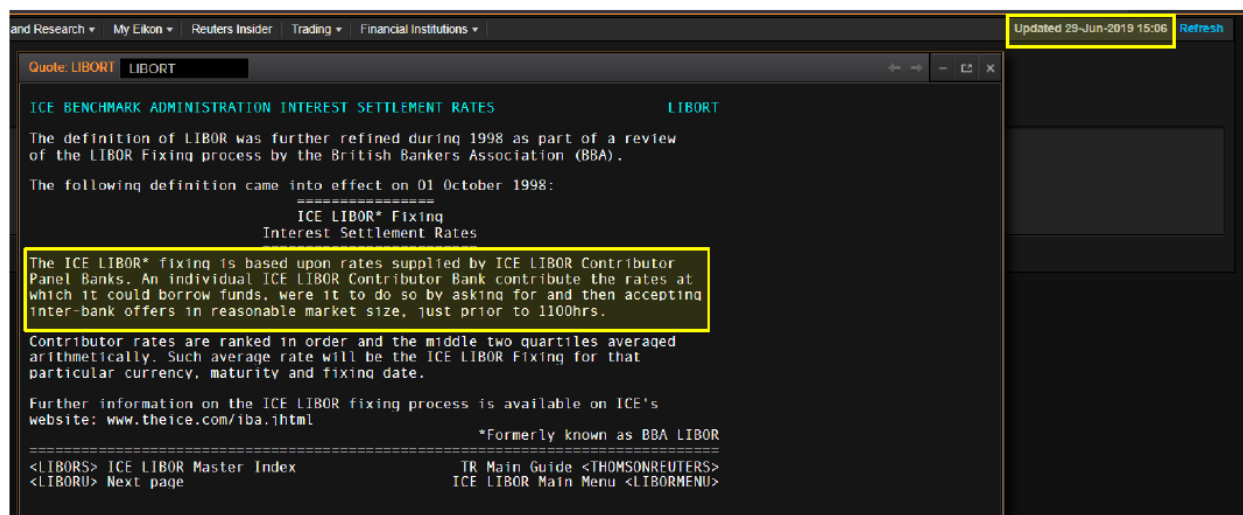
663. In addition, rather than follow the directive of Wheatley to regularly publish “statistical bulletins on underlying trades detailing the condition of the underlying market,”²⁹⁰ during the Class Period, Defendants – in addition to their other daily misrepresentations and nondisclosures, including as to the state of interbank funding and the rates at which they could expect to borrow – concealed the truth as to USD ICE LIBOR rates and submissions by failing to disclose relevant interbank funding statistics and by obfuscating, including by passing off summary information on non-interbank “transactions” underlying USD ICE LIBOR, as including interbank transactions sufficient to support USD ICE LIBOR.

664. Furthermore, even as Defendants have claimed to have moved away from the Submission Question to the so-called “Waterfall” earlier this year, both Reuters and Bloomberg, the most widely used financial information services in the U.S., and the providers of the “screens” through which Defendants publish USD ICE LIBOR rates in the United States, and the “screen rates” by which USD ICE LIBOR Financial Instruments typically expressly define USD ICE LIBOR show that *USD ICE LIBOR is still being defined by the Submission Question to this day:*

²⁹⁰ Wheatley Report, *supra*, at 40.

REUTERS TODAY²⁹¹

The ICE LIBOR* fixing is based upon rates supplied by ICE LIBOR Contributor Panel Banks. An individual ICE LIBOR Contributor Bank contribute [sic] the **rates at which it could borrow funds**, were it to do so by asking for and then accepting inter-bank offers in reasonable market size, just prior to 1100hrs.



BLOOMBERG TODAY²⁹²

ICE LIBOR Rates are based on rates quoted by ICE Contributor Banks. Every contributor bank is asked to base their ICE LIBOR submissions on the following question: "**At what rate could you borrow funds**, were you to do so by asking for

²⁹¹ Reuters Screen, last visited June 29, 2019.

²⁹² Bloomberg Screen, last visited June 25, 2019.

and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”

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ICE Benchmark Administration Limited (IBA)

ICE LIBOR Rates are based on rates quoted by ICE Contributor Banks. Every contributor bank is asked to base their ICE LIBOR submissions on the following question: “At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”

The rates are then published at 11:45am London time daily.

Here are the number of contributing banks for the following currency panels:

US Dollar	: 18 banks
British Pound	: 16 banks
Euro	: 15 banks
Japanese Yen	: 13 banks
Swiss Franc	: 11 banks
Canadian Dollar	: 9 banks
Australian Dollar	: 7 banks
New Zealand Dollar	: 7 banks
Danish Krone	: 6 banks
Swedish Krone	: 6 banks

The full list of contributing banks for each of the currency libors is available on <https://www.theice.com/iba.jhtml>

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665. Defendants also have actively concealed their misconduct by placing substantial barriers to the public access and use of the individual submissions by the Panel Bank Defendants. ICE and the Panel Bank Defendants anonymized and otherwise stopped publishing individual bank submissions alongside ICE LIBOR rates as of July 29, 2016. Even the so-called “anonymized” submissions are not widely available.

666. While the pre-July 2016 individual submissions remain available on services like Bloomberg, the individual submissions after that date are not. Moreover, the anonymized submissions are available only through ICE, which maintains that this data is “proprietary” and requires that persons wishing to view historical data register with ICE and agree to keep it secret. Persons seeking to access individual submissions must agree with “Intercontinental Exchange,

Inc., and any of its respective current or future affiliates” on a number of “Use Restrictions on ICE Content,” which operate to conceal and deter reasonable inquiries into violations of law if observed.

667. These ICE secrecy requirements run contrary to the clear dictate of the Wheatley Report that the inputs to LIBOR be transparent.

VII. CLAIM FOR RELIEF

CLAIM I: PRICE FIXING

668. Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

669. During the Class Period, Defendants combined and conspired to, and did, unreasonably restrain trade by fixing, rigging, and depressing 1-month and 3-month USD ICE LIBOR and returns on USD ICE LIBOR Financial Instruments, as defined herein.

670. Defendants have been engaged in a joint process in setting USD ICE LIBOR. The joint process is concerted action that has been supposedly governed by rules put in place to ostensibly ensure that USD ICE LIBOR rates were representative of a competitive market. Defendants circumvented those rules and otherwise corrupted the joint process by numerous means, turning the joint process into unlawful collusion.

671. The combination and conspiracy alleged herein is a *per se* violation of Section 1 of the Sherman Antitrust Act, 15 U.S.C. §1. Defendants engaged in a horizontal price-fixing conspiracy. USD ICE LIBOR rates form a component of the price of USD ICE LIBOR Financial Instruments, and the fixing of a component of price violates the antitrust laws.

672. During the Class Period, Panel Bank Defendants systematically and continuously made collusively depressed 1-month and 3-month USD ICE LIBOR submissions to ICE on a daily basis for calculation of the 1-month and 3-month USD ICE LIBOR benchmark rates.

673. During the Class Period, Defendants systematically and continuously fixed 1-month and 3-month USD ICE LIBOR benchmark rates at depressed and artificially low levels on a daily basis.

674. During the Class Period, USD ICE LIBOR Financial Instruments, as defined herein, expressly incorporated the systematically and continuously fixed 1-month and 3-month USD ICE LIBOR rates.

675. Attached hereto as **Exhibit A** is a chart containing each daily collusively depressed 1-month and 3-month USD ICE LIBOR benchmark rate, during the Class Period, from February 2014 through June 2019.

676. Attached hereto as **Exhibit B** is a chart containing each publicly-available daily collusively depressed 1-month USD ICE LIBOR submission by each Panel Bank Defendant, during the Class Period, from February 2014 through July 2016.

677. Attached hereto as **Exhibit C** is a chart containing each publicly-available daily collusively depressed 3-month USD ICE LIBOR submission by each Panel Bank Defendant, during the Class Period, from February 2014 through July 2016.

678. Plaintiffs and members of the Class transacted directly with Panel Bank Defendants in USD ICE LIBOR Financial Instruments, and suffered injury and damages when they received less in payments expressly linked to a depressed 1-month or 3-month USD ICE LIBOR benchmark rate, as a material, direct, and proximate result of Defendants' conspiracy and overt acts in furtherance thereof.

679. Plaintiffs and members of the Class have been injured in their business and property by reason of Defendants' violation of Section 1 of the Sherman Act, within the meaning of Section 4 of the Clayton Antitrust Act, 15 U.S.C. §15.

680. Plaintiffs and members of the Class are threatened with future injury to their business and property by reason of Defendants' continuing violation of Section 1 of the Sherman Act, within the meaning of Section 16 of the Clayton Antitrust Act, 15 U.S.C. §26.

VIII. PRAYER FOR RELIEF

WHEREFORE, Plaintiffs, on behalf of themselves and members of the Class, respectfully pray that This Honorable Court:

A. Order that this action may be maintained as a class action pursuant to Rules 23(a) & (b) of the Federal Rules of Civil Procedure, that it be named a Class Representative, that the undersigned be named Lead Class Counsel, and that reasonable notice of this action, as provided by Rule 23(c)(2), be given to members of the Class;

B. Adjudge that Defendants violated federal antitrust law as set forth above;

C. Award Plaintiffs and members of the Class treble damages;

D. Award Plaintiffs and members of the Class attorneys' fees and costs of suit, including costs of consulting and testifying experts;

E. Award Plaintiffs and members of the Class pre- and post-judgment interest;

F. Enjoin Defendants from their violations of law; and

G. Grant such other, further and different relief as may be just and proper.

IX. DEMAND FOR JURY TRIAL

Under Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiffs demand a Trial by Jury as to all issues so triable.

Dated: July 1, 2019

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